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SUPPLEMENT II

TO

TECHNICAL REPORT 46

BASIC DATA

FROM H-34/HIDAL CALIBRATION TRIALS
1963

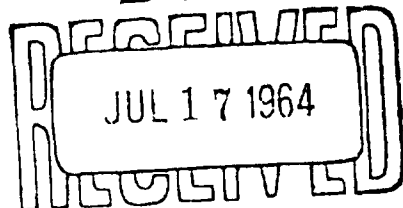
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Fort Detrick, Frederick, Maryland

SUPPLEMENT II
to
TECHNICAL REPORT 46

BASIC DATA FROM
H-34/HIDAL CALIBRATION TRIALS
1963

This research was supported by the
Advanced Research Projects Agency
Project Agile under ARPA Order 256.

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James W. Brown

Crops Division
DIRECTOR OF BIOLOGICAL RESEARCH

Project ARPA Order 256

June 1964

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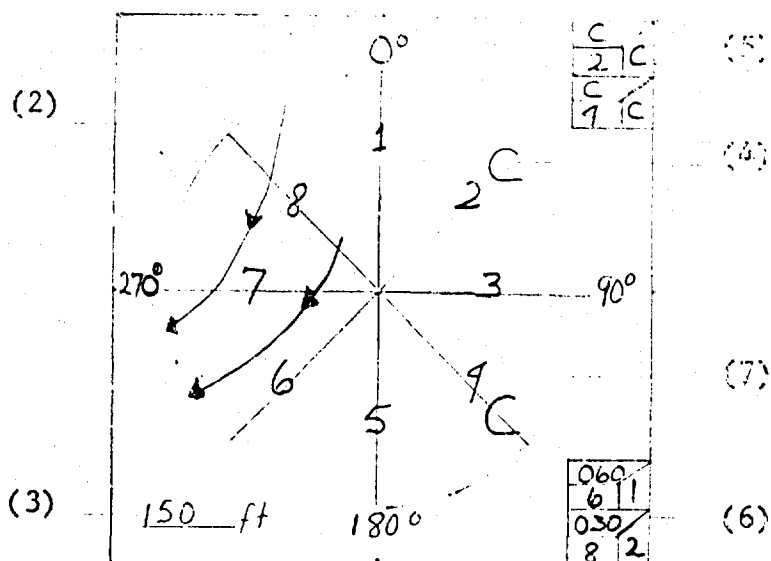
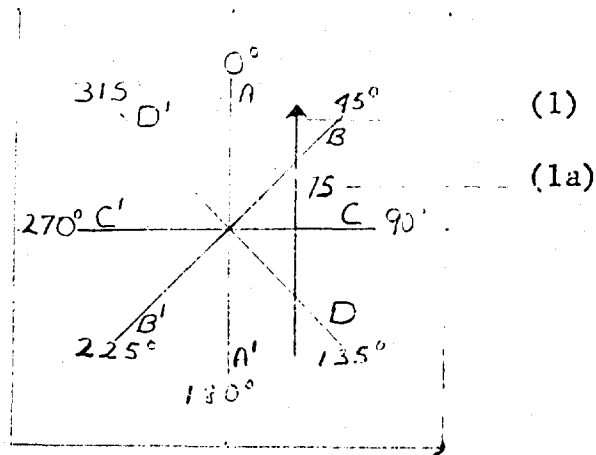
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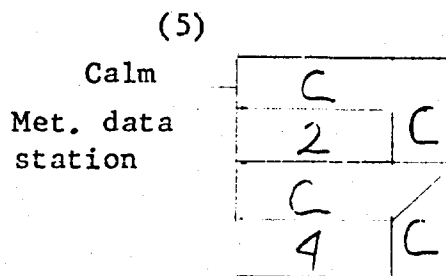
INTRODUCTION

This supplement concerns the calibration of a modified H-34/HIDAL spray system and presents the basic data and spray deposit patterns obtained in 100 test flights at Eglin Air Force Base between 27 June and 16 July 1963. The data are presented in the sequence of ground flow determinations, mass median diameter calculations, and mass deposit measurements.

SAMPLE AND EXPLANATION OF METEOROLOGICAL DATA

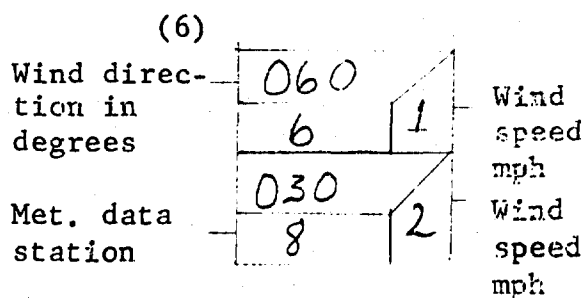


(1) & (1a) — Aircraft course
75 — Station No. aircraft crossed

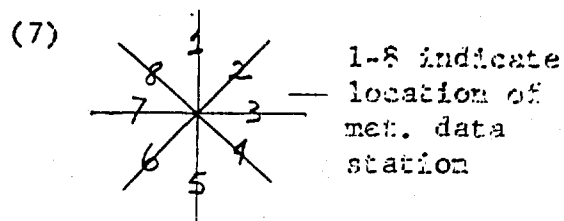


(2) — Wind current

(3) — 150ft — Altitude in feet, met. data obtained



(4) — C — Calm



Sky Conditions

Example: 25 ① 100 ⑪ / + 7
 1 2 3 4 5 6 7

- 1 - Cloud cover height in hundreds of feet
 2 - Cloud Amount 0 - No clouds
 ① - Fair weather cumulus
 ⑪ - Variable sky
 3 - Second cloud cover height in hundreds of feet
 4 - Cloud Amount
 5 - Barometric Tendency / Rising
 - Steady
 6 - Overcast
 / - Visibility in miles

Remarks

| | |
|------------------------|-----------------|
| GPH - Ground Fog Heavy | N - North |
| OCNL - Occasional | E - East |
| C - Clouds | S - South |
| CLR - Clear | W - West |
| CU - Cumulus | LTG - Lightning |
| CB - Cumulo-nimbus | H - Haze |
| FQT - Frequent | S - Smoke |

H-34/HYDAL GROUND FLOW & FLIGHT DATA

| | | | |
|-----------------------|---------------------|-----------------------|---------------------|
| DATE CALIBRATED: | <u>26 June 1963</u> | DATE TEST FLOWN: | <u>27 June 1963</u> |
| LIQUID SPRAYED: | <u>Fuel Oil</u> | TOTAL NOZZLES OPEN: | <u>60</u> |
| NOZZLE TYPE: | <u>8010</u> | LIQUID TEMP: | <u>35° F.</u> |
| DURATION OF SPRAY: | <u>30</u> Sec. | PUMP PRESSURE: | <u>----</u> PSI |
| TOTAL AMOUNT SPRAYED: | <u>28</u> Gal. | BOOM PRESSURE: | <u>32</u> PSI |
| | | FLOW RATE CALIBRATED: | <u>54</u> GPM |

OPERATIONAL DATA DURING FLIGHT

Run 1 - Shakedown flight
Run 2 - Pin sheared in pump

CLASS MEDIAN DIAMETER

DATE: 27 June 1963 SPREAD FACTOR: 6.0
 FLIGHT #: 1 CONVERSION FACTOR: 2.2
 SAMPLE LINE: B PAPER: Kromekote, white
 FLOW RATE: ---- MATERIAL: Fuel Oil
 SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|------|
| 78 | 1 | 3500* | | | |
| 78 | 2 | 3400 | | | |
| 78 | 4 | 3300 | | | |
| 78 | 3 | 3200 | | | |
| 78 | 5 | 3100 | | | |
| 78 | 6 | 3000 | | | |
| 78 | 7 | 2900 | | | |
| 79 | 8 | 2800 | | | |
| 79 | 9 | 2700 | | | |
| 79 | 10 | 2600 | 77 | | 75 |

$$MMD = \frac{\text{Spot D Max}}{\text{Spread Factor} \times \text{Con. Factor}} = \frac{3500}{6.0 \times 2.2} = 265.2 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{3500}{6.0} = 583.3 \text{ Microns}$$

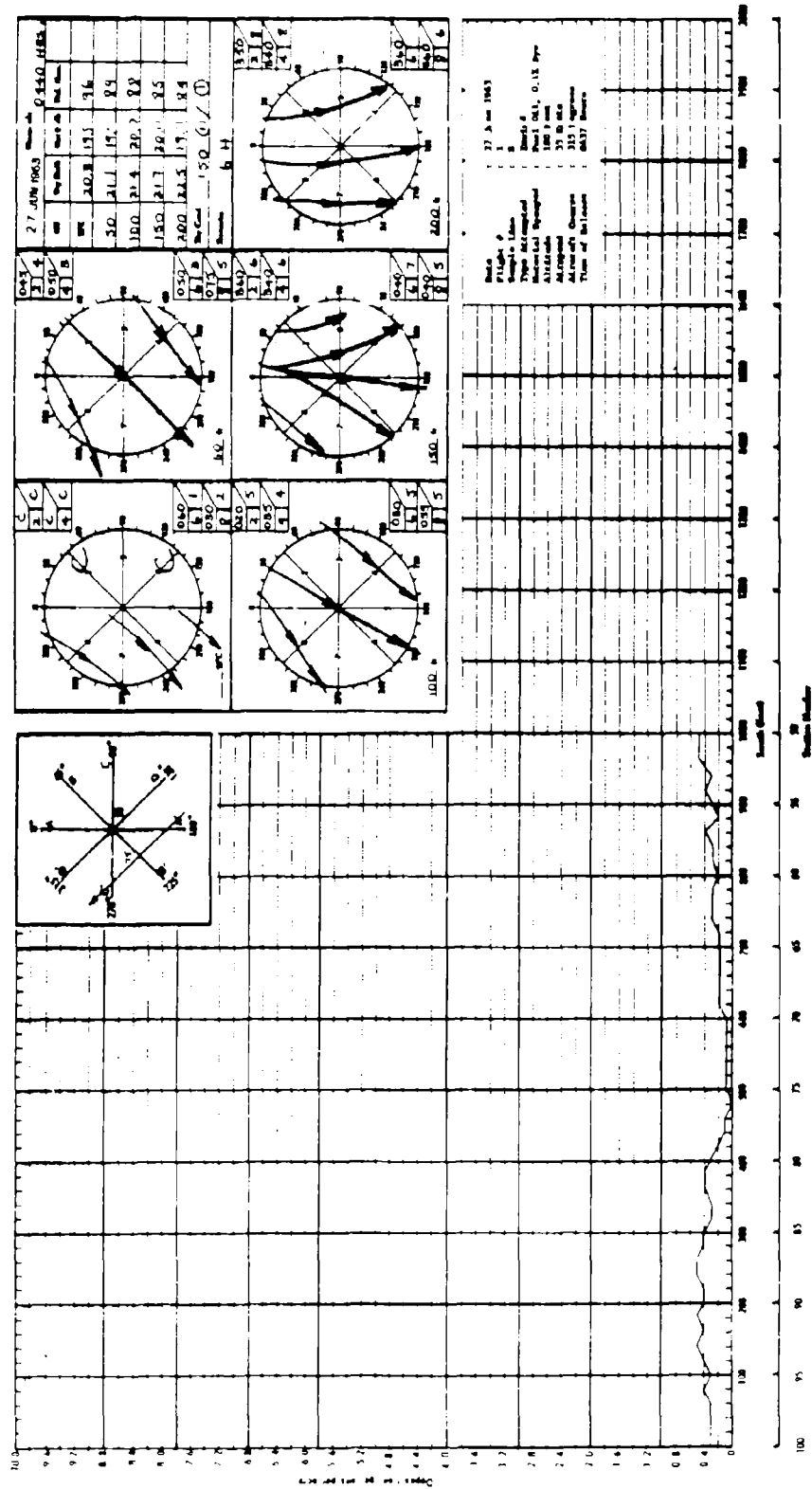
$$\text{Min. Sph. Dia.} = \frac{75}{6.0} = 12.5 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: Fuel Oil FLOW RATE: ----
 DATE: 27 June 1963 SYSTEM: HIDAL
 FLIGHT #: 1 AIRSPEED: 55 Knots
 SAMPLE LINE: B ALTITUDE: 100 Feet
 TIME OF RELEASE: 0437 Hours AIRCRAFT COURSE: 315 Degrees
 DURATION: 10 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------------|--------|---------|--------|---------|--------|---------|--------|
| Stations 1 - 50 Blank | | 51 | 0.5 | 76 | 0.0 | | |
| | | 52 | 0.5 | 77 | 0.1 | | |
| | | 53 | 0.3 | 78 | 0.1 | | |
| | | 54 | 0.4 | 79 | 0.2 | | |
| | | 55 | 0.3 | 80 | 0.3 | | |
| | | 56 | 0.2 | 81 | 0.4 | | |
| | | 57 | 0.4 | 82 | 0.4 | | |
| | | 58 | 0.3 | 83 | 0.3 | | |
| | | 59 | 0.3 | 84 | 0.3 | | |
| | | 60 | 0.2 | 85 | 0.4 | | |
| | | 61 | 0.3 | 86 | 0.4 | | |
| | | 62 | 0.3 | 87 | 0.5 | | |
| | | 63 | 0.3 | 88 | 0.5 | | |
| | | 64 | 0.2 | 89 | 0.4 | | |
| | | 65 | 0.2 | 90 | 0.4 | | |
| | | 66 | 0.2 | 91 | 0.5 | | |
| | | 67 | 0.2 | 92 | 0.4 | | |
| | | 68 | 0.2 | 93 | 0.5 | | |
| | | 69 | 0.2 | 94 | 0.4 | | |
| | | 70 | 0.1 | 95 | 0.3 | | |
| | | 71 | 0.1 | 96 | 0.4 | | |
| | | 72 | 0.1 | 97 | 0.3 | | |
| | | 73 | 0.1 | 98 | 0.3 | | |
| | | 74 | 0.1 | 99 | 0.3 | | |
| | | 75 | 0.1 | 100 | 0.3 | | |

Total 14.5



MASS MEDIAN DIAMETER

DATE: 27 June 1965SPREAD FACTOR: 6.0FLIGHT #: 2CONVERSION FACTOR: 2.2SAMPLE LINE: BPAPER: Kromekote, whiteFLOW RATE: ----MATERIAL: Fuel OilSYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|------|
| 28 | 1 | 4500 | | | |
| 28 | 3 | 4000* | | | |
| 28 | 4 | 3900 | | | |
| 28 | 2 | 3800 | | | |
| 28 | 5 | 3700 | | | |
| 28 | 6 | 3600 | | | |
| 28 | 7 | 3500 | | | |
| 28 | 8 | 3400 | | | |
| 28 | 10 | 3300 | | | |
| 28 | 9 | 3200 | | | |
| 28 | 11 | 3100 | 50 | | 100 |

$$\text{MMD} = \frac{\text{Spot D Max}}{\text{Spread Factor} \times \text{Con. Factor}} = \frac{4000}{6.0 \times 2.2} = 303.0 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{4500}{6.0} = 750 \text{ Microns}$$

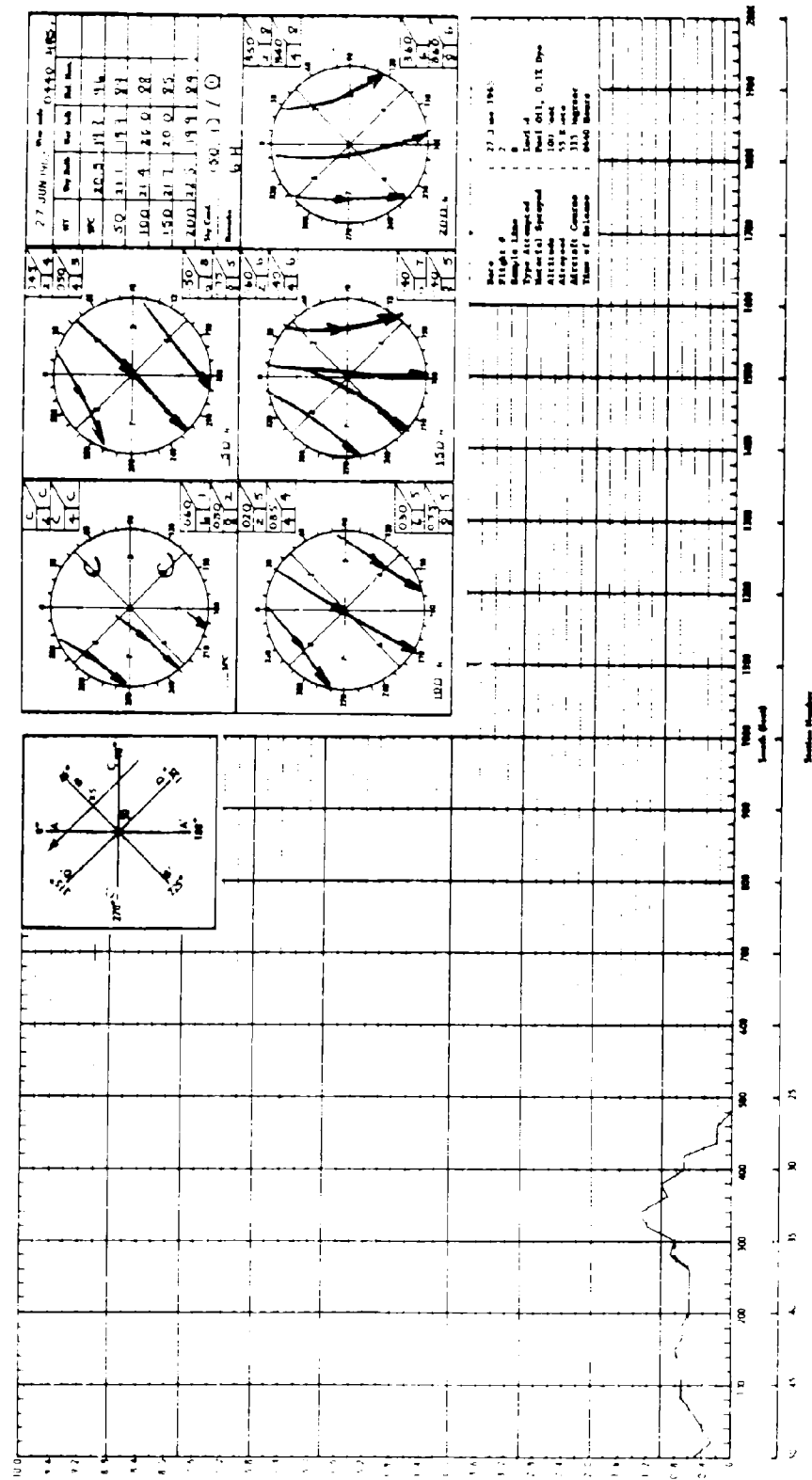
$$\text{Min. Sph. Dia.} = \frac{100}{6.0} = 16.7 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: Fuel Oil : FLOW RATE: ----
 DATE: 27 June 1963 SYSTEM: HIDAL
 FLIGHT #: 2 AIRSPEED: 55 Knots
 SAMPLE LINE: B ALTITUDE: 100 Feet
 TIME OF RELEASE: 0440 Hours AIRCRAFT COURSE: 315 Degrees
 DURATION: 14 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------------|--------|---------|--------|-------------------------|--------|---------|--------|
| Stations 1 - 26 Blank | | | | Stations 51 - 100 Blank | | | |
| | | 27 | 0.2 | | | | |
| | | 28 | 0.2 | | | | |
| | | 29 | 0.7 | | | | |
| | | 30 | 0.7 | | | | |
| | | 31 | 1.0 | | | | |
| | | 32 | 0.9 | | | | |
| | | 33 | 1.3 | | | | |
| | | 34 | 1.2 | | | | |
| | | 35 | 0.8 | | | | |
| | | 36 | 0.9 | | | | |
| | | 37 | 0.6 | | | | |
| | | 38 | 0.6 | | | | |
| | | 39 | 0.6 | | | | |
| | | 40 | 0.6 | | | | |
| | | 41 | 0.7 | | | | |
| | | 42 | 0.7 | | | | |
| | | 43 | 0.8 | | | | |
| | | 44 | 0.7 | | | | |
| | | 44 | 0.7 | | | | |
| | | 46 | 0.7 | | | | |
| | | 47 | 0.5 | | | | |
| | | 48 | 0.4 | | | | |
| | | 49 | 0.3 | | | | |
| | | 50 | 0.5 | | | | |

Total 12.4



H-34/NIDAL GROUND FLOW & FLIGHT DATA

| | |
|---|-------------------------------------|
| DATE CALIBRATED: <u>1 July 1963</u> | DATE TEST FLOWN: <u>2 July 1963</u> |
| LIQUID SPRAYED: <u>2 Fuel Oil, 1 Purple</u> | TOTAL NOZZLES OPEN: <u>60</u> |
| NOZZLE TYPE: <u>8010</u> | LIQUID TEMP: <u>37° C</u> |
| DURATION OF SPRAY: <u>30</u> Sec. | PUMP PRESSURE: <u>40</u> PSI |
| TOTAL AMOUNT SPRAYED: <u>30</u> Gal. | BOOM PRESSURE: <u>36</u> PSI |
| | FLOW RATE CALIBRATED: <u>60</u> GPM |

OPERATIONAL DATA DURING FLIGHT

Above information same for Runs 1 - 6.

| | |
|---|-------------------------------------|
| DATE CALIBRATED: <u>1 July 1963</u> | DATE TEST FLOWN: <u>2 July 1963</u> |
| LIQUID SPRAYED: <u>2 Fuel Oil, 1 Purple</u> | TOTAL NOZZLES OPEN: <u>60</u> |
| NOZZLE TYPE: <u>Check valves only</u> | LIQUID TEMP: <u>37° C</u> |
| DURATION OF SPRAY: <u>30</u> Sec. | PUMP PRESSURE: <u>16</u> PSI |
| TOTAL AMOUNT SPRAYED: <u>40</u> Gal. | BOOM PRESSURE: <u>14</u> PSI |
| | FLOW RATE CALIBRATED: <u>80</u> GPM |

OPERATIONAL DATA DURING FLIGHT

Above information same for Runs 7 - 12.

MASS MEDIAN DIAMETER

DATE: 2 July, 1960 CONVERSION FACTOR: 2.2
 FLIGHT NO.: 1 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 60 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 77 | 2 | 4400* | | | |
| 77 | 1 | 4300 | | | |
| 77 | 6 | 4200 | | | |
| 77 | 5 | 4100 | | | |
| 78 | 8 | 4000 | | | |
| 77 | 7 | 3800 | 76 | 1 | 75 (smallest) |
| 77 | 3 | 3700 | | | |
| 77 | 4 | 3600 | | | |
| 77 | 10 | 3500 | | | |
| 77 | 9 | 3400 | | | |

$$\text{MMD} = \frac{67.72 + 0.1420 (\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{4400}{6.355 \times 2.2} = 314.7 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420 (4400)}{6.355} = \frac{4400}{6.355} = 692.4 \text{ Microns}$$

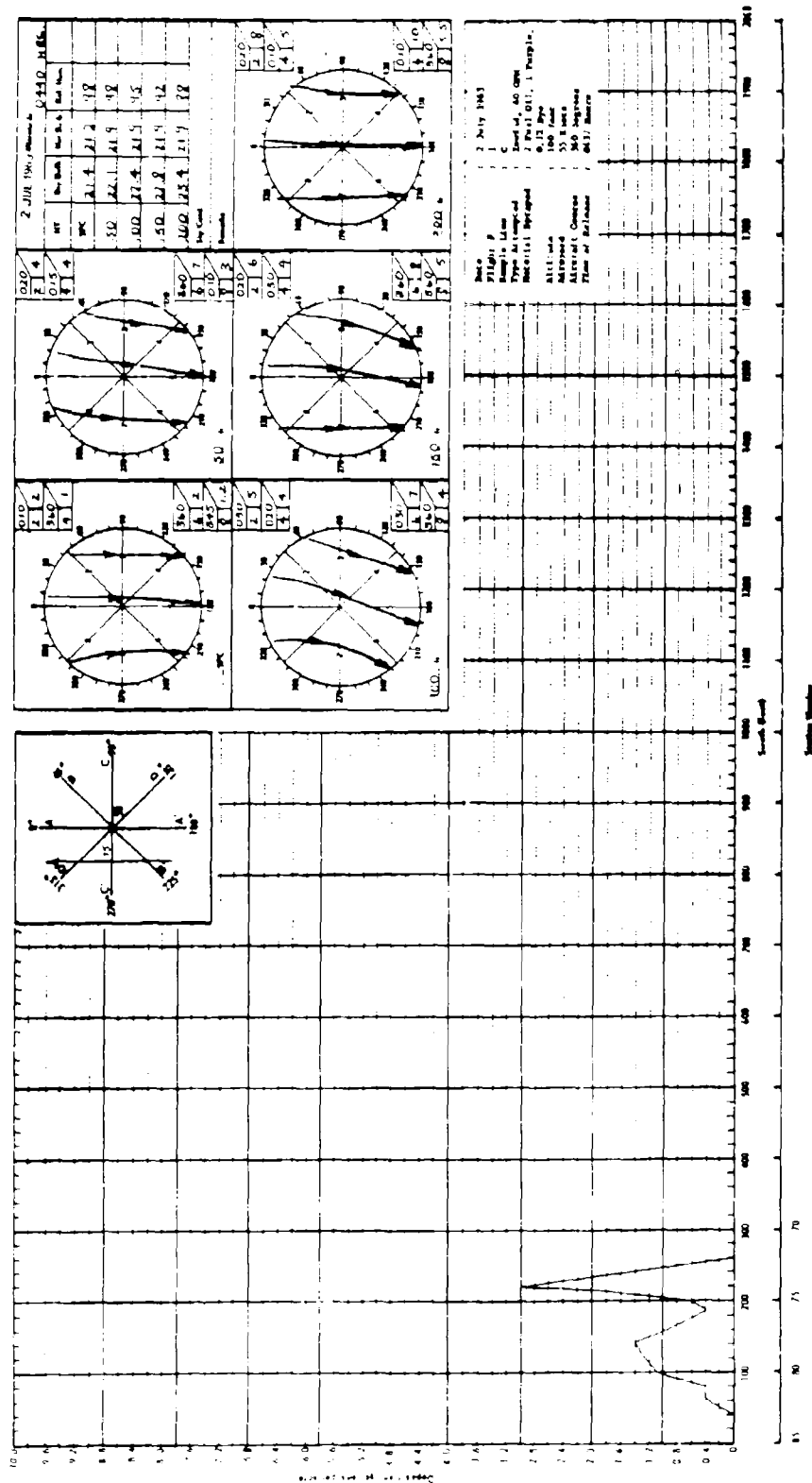
$$\text{Min. Sph. Dia.} = 48 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 60 GPM
 DATE: 2 July 1963 SYSTEM: HIDAL
 FLIGHT #: 1 AIRSPEED: 55 Knots
 SAMPLE LINE: C ALTITUDE: 100 Feet
 TIME OF RELEASE: 0437 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 12.5 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|---------|--------|-------------------------|--------|---------|--------|
| Stations 1 - 72 | Blank | | | 73 | 3.0 | | |
| | | | | 74 | 1.9 | | |
| | | | | 75 | 0.6 | | |
| | | | | 76 | 0.4 | | |
| | | | | 77 | 1.0 | | |
| | | | | 78 | 1.4 | | |
| | | | | 79 | 1.3 | | |
| | | | | 80 | 1.1 | | |
| | | | | 81 | 0.4 | | |
| | | | | 82 | 0.4 | | |
| | | | | 83 | 0.0 | | |
| | | | | Stations 84 - 100 Blank | | | |

Total 11.5



MASS MEDIAN DIAMETER

DATE: 2 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 2 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 60 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|----------------|
| 30 | 3 | 5000 | | | |
| 30 | 4 | 4700 | | | |
| 28 | 1 | 4400* | | | |
| 29 | 2 | 4300 | | | |
| 28 | 8 | 4200 | | | |
| 30 | 5 | 4100 | | | |
| 31 | 6 | 4000 | 38 | 1 | 100 (smallest) |
| 25 | 7 | 3900 | | | |
| 25 | 9 | 3800 | | | |
| 28 | 10 | 3700 | | | |

$$MMD = \frac{67.72 + 0.1420(\text{Spot D Max})}{2.2} = \frac{4400}{6.355 \times 2.2} = 314.7 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(5000)}{6.430} = \frac{5000}{6.430} = 777.6 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 60 GPM
 DATE: 2 July 1963 SYSTEM: HIDAL
 FLIGHT #: 2 AIRSPEED: 55 Knots
 SAMPLE LINE: C ALTITUDE: 100 Feet
 TIME OF RELEASE: 0439 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 11 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------|--------|---------|--------|---------|--------|
| Stations 1 - 23 | Blank | 24 | 0.0 | | | | |
| | | 25 | 1.1 | | | | |
| | | 26 | 1.0 | | | | |
| | | 27 | 0.6 | | | | |
| | | 28 | 0.6 | | | | |
| | | 29 | 0.9 | | | | |
| | | 30 | 1.0 | | | | |
| | | 31 | 1.1 | | | | |
| | | 32 | 0.6 | | | | |
| | | 33 | 1.0 | | | | |
| | | 34 | 0.6 | | | | |
| | | 35 | 0.8 | | | | |
| | | 36 | 0.7 | | | | |
| | | 37 | 0.4 | | | | |
| | | 38 | 0.2 | | | | |
| | | 39 | 0.1 | | | | |
| | | 40 | 0.1 | | | | |
| | | 41 | 0.1 | | | | |
| | | Stations 42 - 100 | Blank | | | | |

Total 10.9

MASS MEDIAN DIAMETER

DATE: 2 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 3PAPER: Kromekote, whiteSAMPLE LINE: CMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 60 GPMSYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 75 | 4 | 3700 | | | |
| 79 | 3 | 3200* | | | |
| 79 | 2 | 3100 | | | |
| 78 | 1 | 3000 | | | |
| 79 | 5 | 2900 | 78 | 1A | 100(smallest) |
| 78 | 6 | 2800 | | | |
| 78 | 7 | 2700 | | | |
| 78 | 8 | 2600 | | | |
| 78 | 10 | 2500 | | | |
| 78 | 9 | 2400 | | | |

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{3200}{6.355 \times 2.2} = 237.3 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(3700)}{6.430} = \frac{3700}{6.430} = 593.0 \text{ Microns}$$

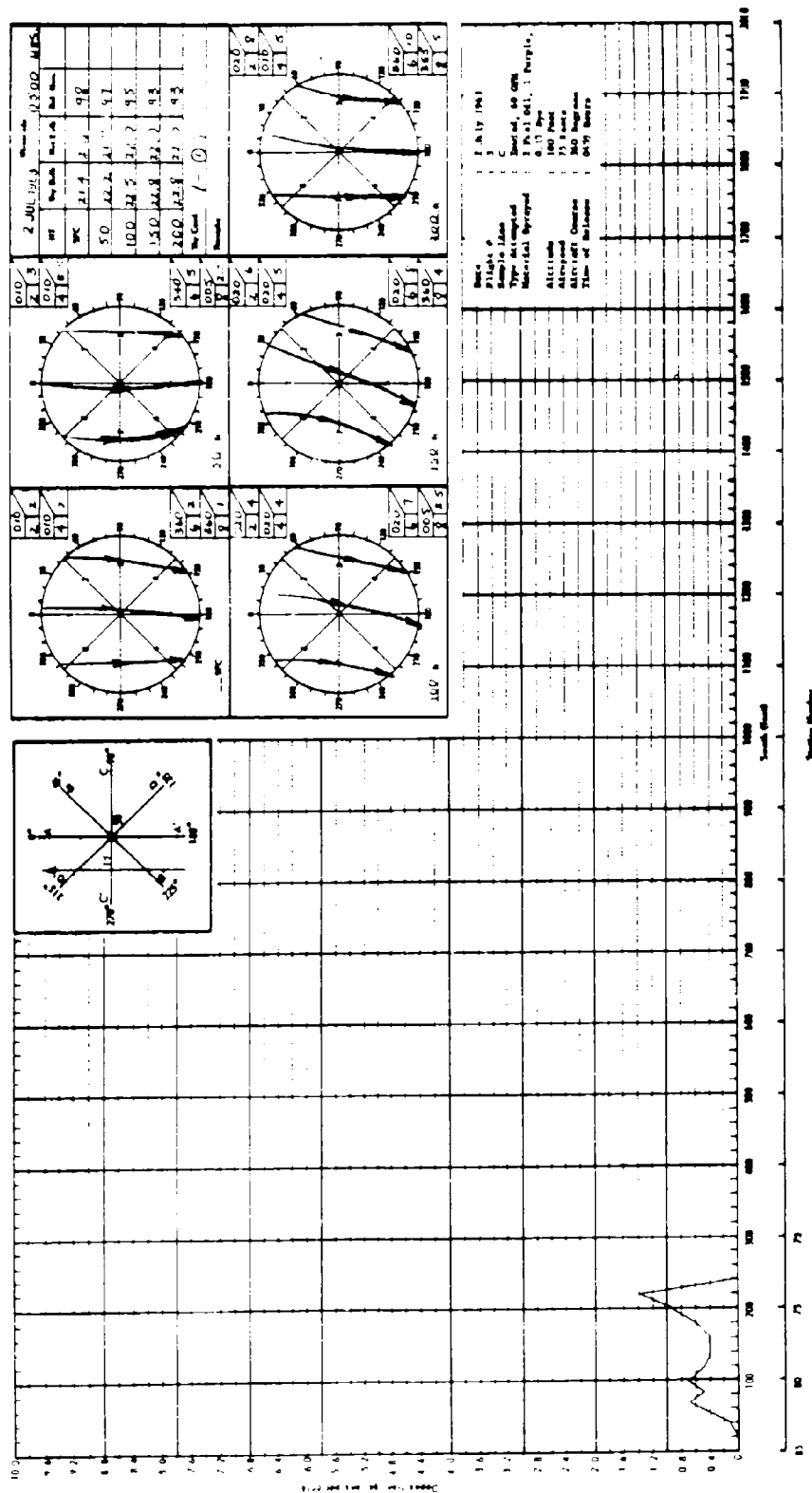
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 60 GPM
 DATE: 2 July 1963 SYSTEM: HIDAL
 FLIGHT #: 3 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 100 Feet
 TIME OF RELEASE: 0459 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 7.5 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------------|--------|---------|--------|-------------------------|--------|---------|--------|
| Stations 1 - 73 Blank | | | | 74 | 1.4 | | |
| | | | | 75 | 0.9 | | |
| | | | | 76 | 0.6 | | |
| | | | | 77 | 0.4 | | |
| | | | | 78 | 0.4 | | |
| | | | | 79 | 0.5 | | |
| | | | | 80 | 0.7 | | |
| | | | | 81 | 0.5 | | |
| | | | | 82 | 0.7 | | |
| | | | | 83 | 0.1 | | |
| | | | | Stations 84 - 100 Blank | | | |

Total 6.2



MASS MEDIAN DIAMETER

DATE: 2 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 4 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 60 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|----------------|
| 29 | 1 | 3400* | | | |
| 24 | 4 | 3300 | | | |
| 29 | 2 | 3100 | | | |
| 29 | 3 | 3000 | | | |
| 29 | 5 | 2900 | | | |
| 29 | 6 | 2800 | 26 | 1A | 100 (smallest) |
| 29 | 7 | 2700 | | | |
| 29 | 8 | 2600 | | | |
| 29 | 9 | 2500 | | | |
| 29 | 10 | 2400 | | | |

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{3400}{6.355 \times 2.2} = 250.2 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(3400)}{6.430} = \frac{3400}{6.430} = 550.4 \text{ Microns}$$

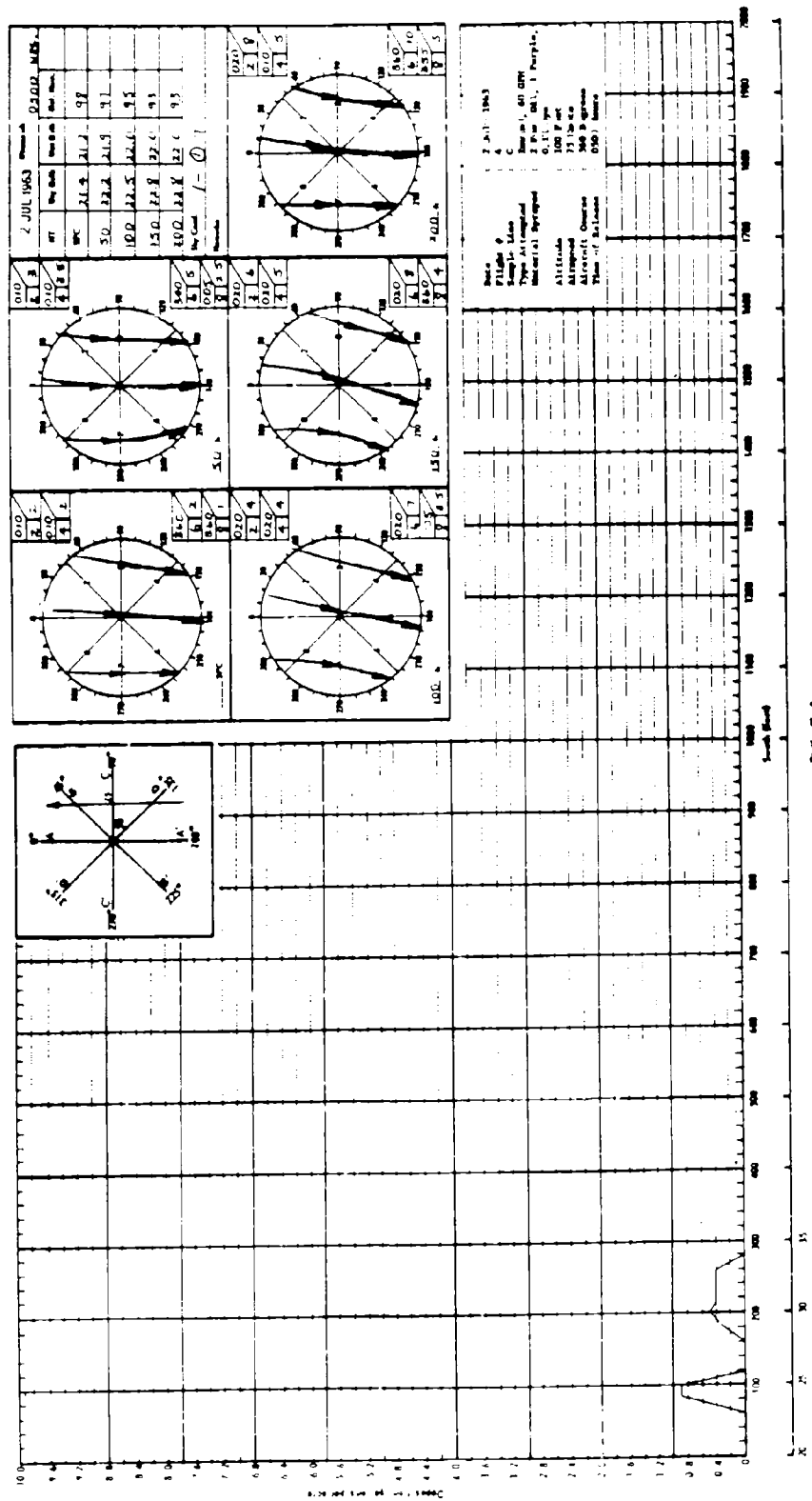
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 60 GPM
 DATE: 2 July 1963 SYSTEM: HIDAL
 FLIGHT #: 4 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 100 Feet
 TIME OF RELEASE: 0500 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 7 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------|--------|---------|--------|---------|--------|
| Stations 1 - 23 | Blank | 24 | 0.9 | | | | |
| | | 25 | 0.9 | | | | |
| | | 26 | 0.0 | | | | |
| | | 27 | 0.0 | | | | |
| | | 28 | 0.0 | | | | |
| | | 29 | 0.3 | | | | |
| | | 30 | 0.5 | | | | |
| | | 31 | 0.4 | | | | |
| | | 32 | 0.4 | | | | |
| | | 33 | 0.4 | | | | |
| | | Stations 34 - 100 | Blank | | | | |

Total 3.6



MASS MEDIAN DIAMETER

DATE: 2 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 5 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 60 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 79 | 5 | 4800 | | | |
| 78 | 1 | 4300* | | | |
| 80 | 6 | 4200 | | | |
| 78 | 2 | 4100 | | | |
| 78 | 4 | 4000 | 78 | 1A | 100(smallest) |
| 78 | 3 | 3900 | | | |
| 79 | 8 | 3700 | | | |
| 78 | 7 | 3600 | | | |
| 80 | 10 | 3500 | | | |
| 80 | 9 | 3400 | | | |

$$\text{MMD} = \frac{67.72 + 0.1420(\text{spot D Max})}{\text{Con Factor} = 2.2} = \frac{4300}{6.355 \times 2.2} = 308.2 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(4000)}{6.430} = \frac{4800}{6.430} = 749.2 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 60 GPM
 DATE: 2 July 1963 SYSTEM: HIDAL
 FLIGHT #: 5 AIRSPEED: 55 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0518 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 09 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|---------|--------|---------|--------|-------------------|--------|
| Stations 1 - 73 | Blank | | | | | 74 | 2.7 |
| | | | | | | 75 | 1.7 |
| | | | | | | 76 | 0.9 |
| | | | | | | 77 | 0.6 |
| | | | | | | 78 | 0.2 |
| | | | | | | 79 | 1.1 |
| | | | | | | 80 | 1.0 |
| | | | | | | 81 | 0.8 |
| | | | | | | 82 | 1.3 |
| | | | | | | 83 | 0.6 |
| | | | | | | 84 | 0.5 |
| | | | | | | 85 | 0.0 |
| | | | | | | 86 | 0.0 |
| | | | | | | Stations 87 - 100 | |
| | | | | | | Blank | |

Total 12.0

MASS MEDIAN DIAMETER

DATE: 2 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 6 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 60 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 24 | 1 | 5000 | | | |
| 29 | 6 | 4100* | | | |
| 29 | 3 | 4000 | | | |
| 27 | 7 | 3900 | | | |
| 29 | 2 | 3800 | 34 | 1 | 100(smallest) |
| 29 | 5 | 3700 | | | |
| 29 | 4 | 3600 | | | |
| 29 | 8 | 3500 | | | |
| 24 | 9 | 3400 | | | |
| 29 | 10 | 3300 | | | |

$$\text{MMD} = \frac{67.72 + 0.1420(\text{spot D Max})}{\text{Con. Factor} = 2.2} = \frac{4100}{6.355 \times 2.2} = 295.3 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(5000)}{6.430} = \frac{5000}{6.430} = 777.6 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 60 GPM
 DATE: 2 July 1963 SYSTEM: HIDAL
 FLIGHT #: 6 AIRSPEED: 55 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0520 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 08 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------|--------|---------|--------|---------|--------|
| Stations 1 - 23 | Blank | 24 | 1.4 | | | | |
| | | 25 | 1.5 | | | | |
| | | 26 | 0.7 | | | | |
| | | 27 | 0.8 | | | | |
| | | 28 | 1.0 | | | | |
| | | 29 | 1.0 | | | | |
| | | 30 | 0.9 | | | | |
| | | 31 | 0.9 | | | | |
| | | 32 | 0.7 | | | | |
| | | 33 | 0.4 | | | | |
| | | 34 | 0.4 | | | | |
| | | 35 | 0.5 | | | | |
| | | 36 | 0.2 | | | | |
| | | 37 | 0.3 | | | | |
| | | Stations 38 - 100 | Blank | | | | |

Total 10.7

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 60 GPM
 DATE: 2 July 1963 SYSTEM: HIDAL
 FLIGHT #: 6 AIRSPEED: 55 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0520 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 08 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------------|--------|---------|--------|---------|--------|
| Stations 1 - 23 | Blank | 24 | 1.4 | | | | |
| | | 25 | 1.5 | | | | |
| | | 26 | 0.7 | | | | |
| | | 27 | 0.8 | | | | |
| | | 28 | 1.0 | | | | |
| | | 29 | 1.0 | | | | |
| | | 30 | 0.9 | | | | |
| | | 31 | 0.9 | | | | |
| | | 32 | 0.7 | | | | |
| | | 33 | 0.4 | | | | |
| | | 34 | 0.4 | | | | |
| | | 35 | 0.5 | | | | |
| | | 36 | 0.2 | | | | |
| | | 37 | 0.3 | | | | |
| | | Stations 38 - 100 Blank | | | | | |

Total 10.7



MASS MEDIAN DIAMETER

DATE: 2 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 7 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 80 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 77 | 1 | 5100* | | | |
| 77 | 2 | 5000 | | | |
| 77 | 5 | 4900 | | | |
| 77 | 3 | 4800 | | | |
| 77 | 4 | 4700 | 83 | 1 | 100(smallest) |
| 77 | 6 | 4600 | | | |
| 75 | 9 | 4500 | | | |
| 77 | 8 | 4400 | | | |
| 77 | 7 | 4300 | | | |
| 77 | 10 | 4100 | | | |

$$\text{MMD} = \frac{67.72 + 0.1420(\text{spot D Max})}{\text{Con. Factor} = 2.2} = \frac{5100}{6.355 \times 2.2} = 359.9 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(5100)}{6.430} = \frac{5100}{6.430} = 791.8 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 2 July 1963 SYSTEM: HIDAL
 FLIGHT #: 7 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0539 Hour AIRCRAFT COURSE: 360 Degrees
 DURATION: 08 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|---------|--------|---------|--------|-------------------|--------|
| Stations 1 - 71 | Blank | | | | | 72 | 0.3 |
| | | | | | | 73 | 3.5 |
| | | | | | | 74 | 1.5 |
| | | | | | | 75 | 0.9 |
| | | | | | | 76 | 0.5 |
| | | | | | | 77 | 1.4 |
| | | | | | | 78 | 2.3 |
| | | | | | | 79 | 2.2 |
| | | | | | | 80 | 1.1 |
| | | | | | | 81 | 0.5 |
| | | | | | | 82 | 0.6 |
| | | | | | | 83 | 0.5 |
| | | | | | | 84 | 0.2 |
| | | | | | | Stations 85 - 100 | Blank |

Total 14.5

MASS MEDIAN DIAMETER

DATE: 2 July 1963CONVERSION FACTOR: 2.2 -FLIGHT #: 8PAPER: Kromekote, whiteSAMPLE LINE: CMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMSYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 28 | 2 | 5000 | | | |
| 28 | 3 | 4900 | | | |
| 24 | 1 | 4800 | | | |
| 27 | 6 | 4600 | | | |
| 27 | 4 | 4200* | | | |
| 24 | 11 | 4100 | 28 | 1 | 100(smallest) |
| 25 | 8 | 4000 | | | |
| 25 | 7 | 3900 | | | |
| 25 | 10 | 3800 | | | |
| 27 | 5 | 3700 | | | |
| 24 | 12 | 3600 | | | |
| 24 | 9 | 3500 | | | |
| 27 | 13 | 3400 | | | |

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} - 2.2} = \frac{4200}{6.355 \times 2.2} = 301.8 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(5000)}{6.430} = \frac{5000}{6.430} = 777.6 \text{ Microns}$$

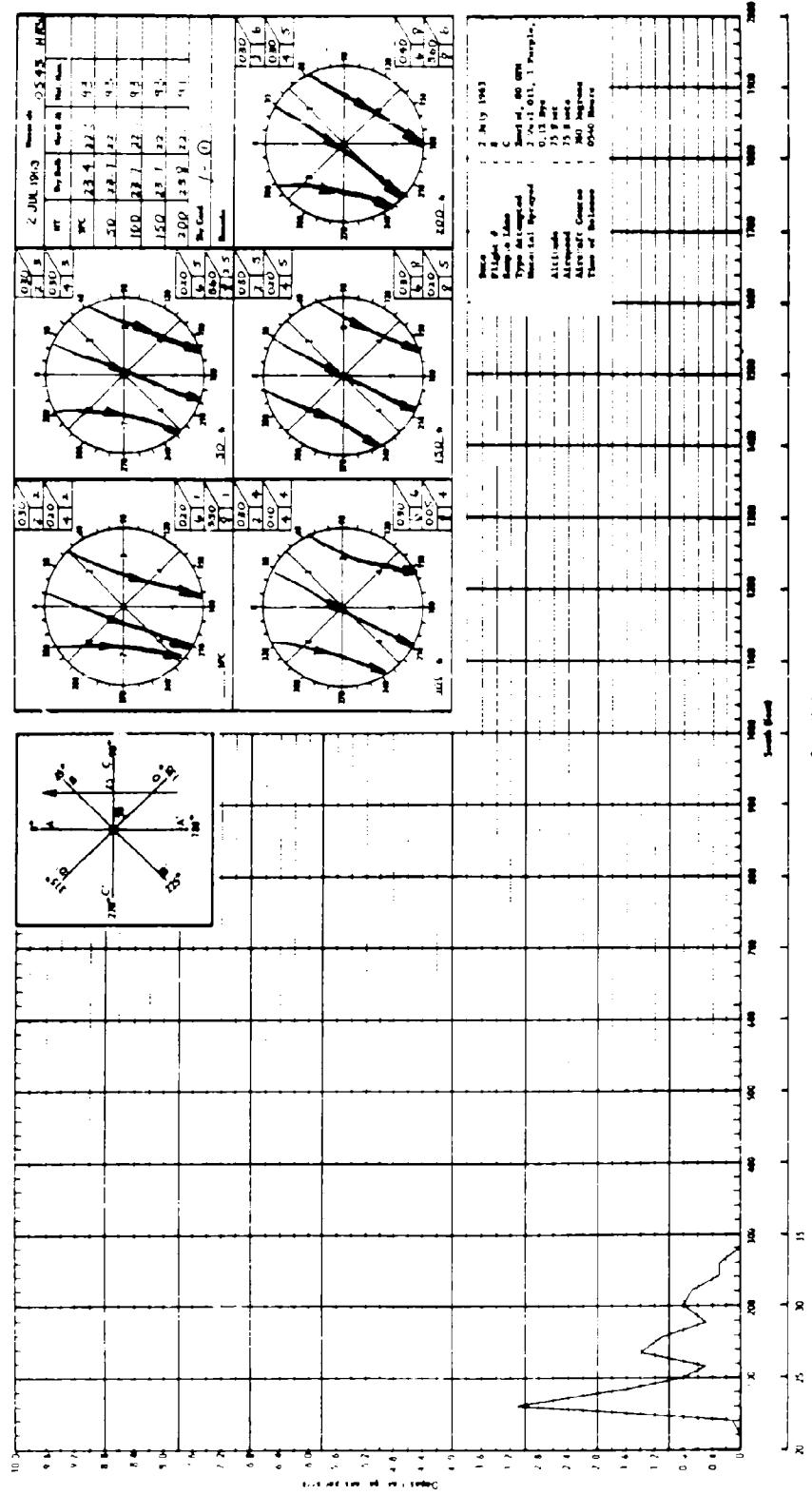
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 2 July 1963 SYSTEM: HIDAL
 FLIGHT #: 8 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0540 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 07 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------|--------|---------|--------|---------|--------|
| Stations 1 - 21 | Blank | 22 | 0.1 | | | | |
| | | 23 | 3.1 | | | | |
| | | 24 | 1.6 | | | | |
| | | 25 | 0.8 | | | | |
| | | 26 | 0.5 | | | | |
| | | 27 | 1.4 | | | | |
| | | 28 | 1.1 | | | | |
| | | 29 | 0.5 | | | | |
| | | 30 | 0.8 | | | | |
| | | 31 | 0.7 | | | | |
| | | 32 | 0.3 | | | | |
| | | 33 | 0.3 | | | | |
| | | Stations 34 - 100 | Blank | | | | |

Total 10.2



MASS MEDIAN DIAMETER

DATE: 2 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 9 PAPER: Kromekote, white
 SAMPLE LINE: D MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 80 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|----------------|
| 24 | 1 | 5900 | | | |
| 24 | 2 | 5500* | | | |
| 24 | 4 | 5300 | | | |
| 24 | 5 | 5200 | | | |
| 24 | 3 | 5000 | | | |
| 24 | 6 | 4900 | | | |
| 24 | 8 | 4800 | 4 | 1 | 100 (smallest) |
| 24 | 7 | 4700 | | | |
| 24 | 10 | 4600 | | | |
| 24 | 11 | 4500 | | | |
| 24 | 9 | 4400 | | | |

$$MMD = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{5500}{6.523 \times 2.2} = 383.3 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = 67.72 + 0.1420(5900) = \frac{5900}{6.558} = 899.7 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

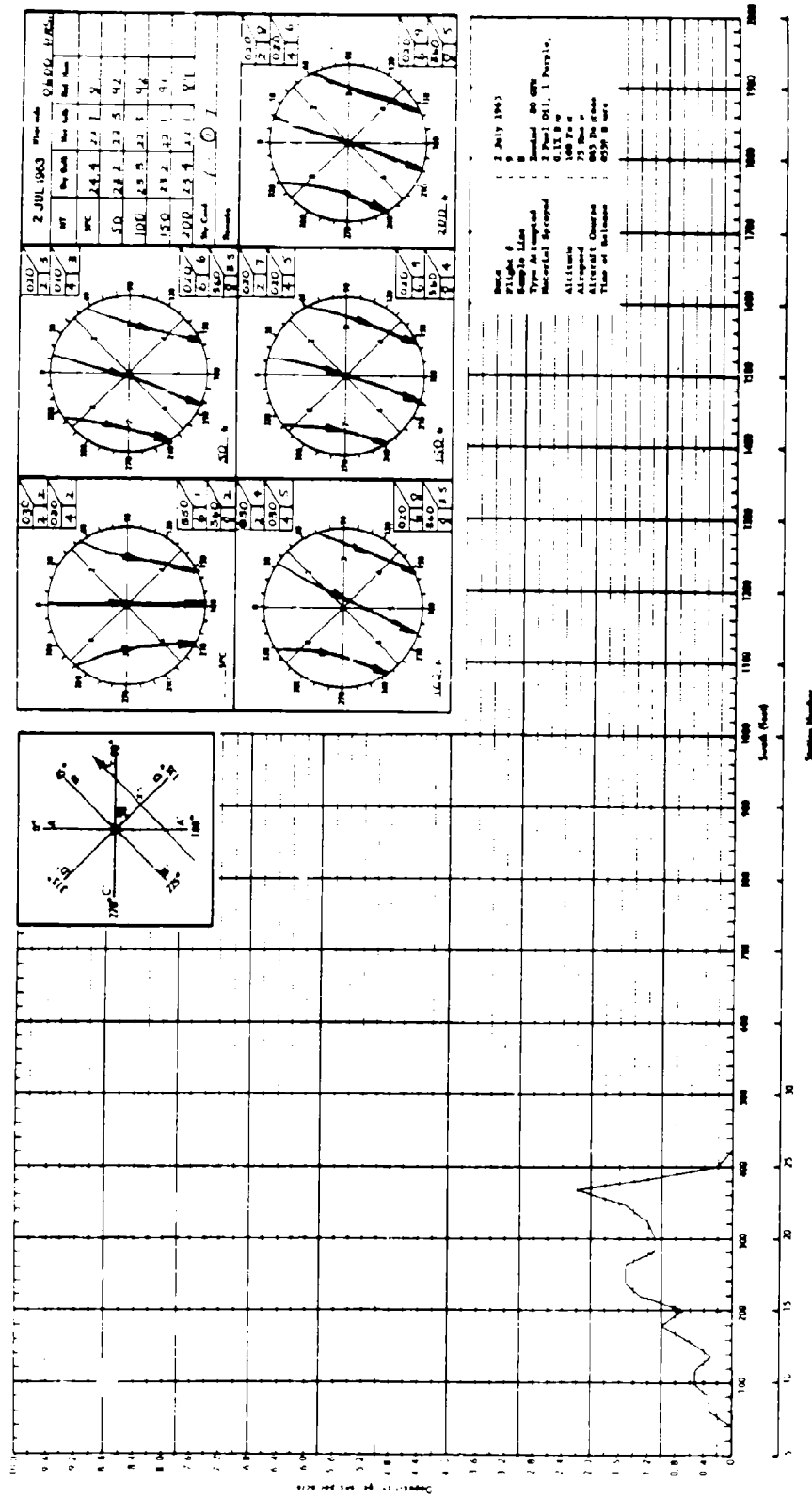
MASS DEPOSIT

| | |
|---|--|
| MATERIAL: <u>2 Fuel Oil, 1 Purple</u> | FLOW RATE: <u>80</u> <u>GPM</u> |
| DATE: <u>2 July 1963</u> | SYSTEM: <u>HIDAL</u> |
| FLIGHT #: <u>9</u> | AIRSPEED: <u>75</u> <u>Knots</u> |
| SAMPLE LINE: <u>D</u> | ALTITUDE: <u>100</u> <u>Feet</u> |
| TIME OF RELEASE: <u>0559</u> <u>Hours</u> | AIRCRAFT COURSE: <u>045</u> <u>Degrees</u> |
| DURATION: <u>08</u> <u>Secs.</u> | |

| | | | |
|-----------------------------|-----------------------|-----------------------|-----------------------|
| <u>STATION G.P.A.</u> | <u>STATION G.P.A.</u> | <u>STATION G.P.A.</u> | <u>STATION G.P.A.</u> |
| <u>Stations 1 - 7 Blank</u> | | | |

| | | |
|----|-----|-------------------------|
| 8 | 0.3 | Stations 26 - 100 Blank |
| 9 | 0.3 | |
| 10 | 0.5 | |
| 11 | 0.5 | |
| 12 | 0.3 | |
| 13 | 0.6 | |
| 14 | 1.0 | |
| 15 | 0.7 | |
| 16 | 1.3 | |
| 17 | 1.5 | |
| 18 | 1.5 | |
| 19 | 1.1 | |
| 20 | 1.1 | |
| 21 | 1.2 | |
| 22 | 1.5 | |
| 23 | 2.2 | |
| 24 | 1.2 | |
| 25 | 0.2 | |

Total 17.0



MASS MEDIAN DIAMETER

DATE: 2 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 10 PAPER: Kromekote, white
 SAMPLE LINE: D MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 80 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 75 | 1 | 5200 | | | |
| 75 | 2 | 4600 | | | |
| 75 | 3 | 4200* | | | |
| 75 | 4 | 4100 | | | |
| 75 | 5 | 4000 | | | |
| 75 | 6 | 3900 | | | |
| 75 | 7 | 3800 | 51 | 1 | 100(smallest) |
| 75 | 10 | 3700 | | | |
| 75 | 9 | 3600 | | | |
| 75 | 8 | 3500 | | | |
| 75 | 11 | 3400 | | | |

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{4200}{6.325 \times 2.2} = 301.8 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(5200)}{6.493} = \frac{5200}{6.493} = 800.9 \text{ Microns}$$

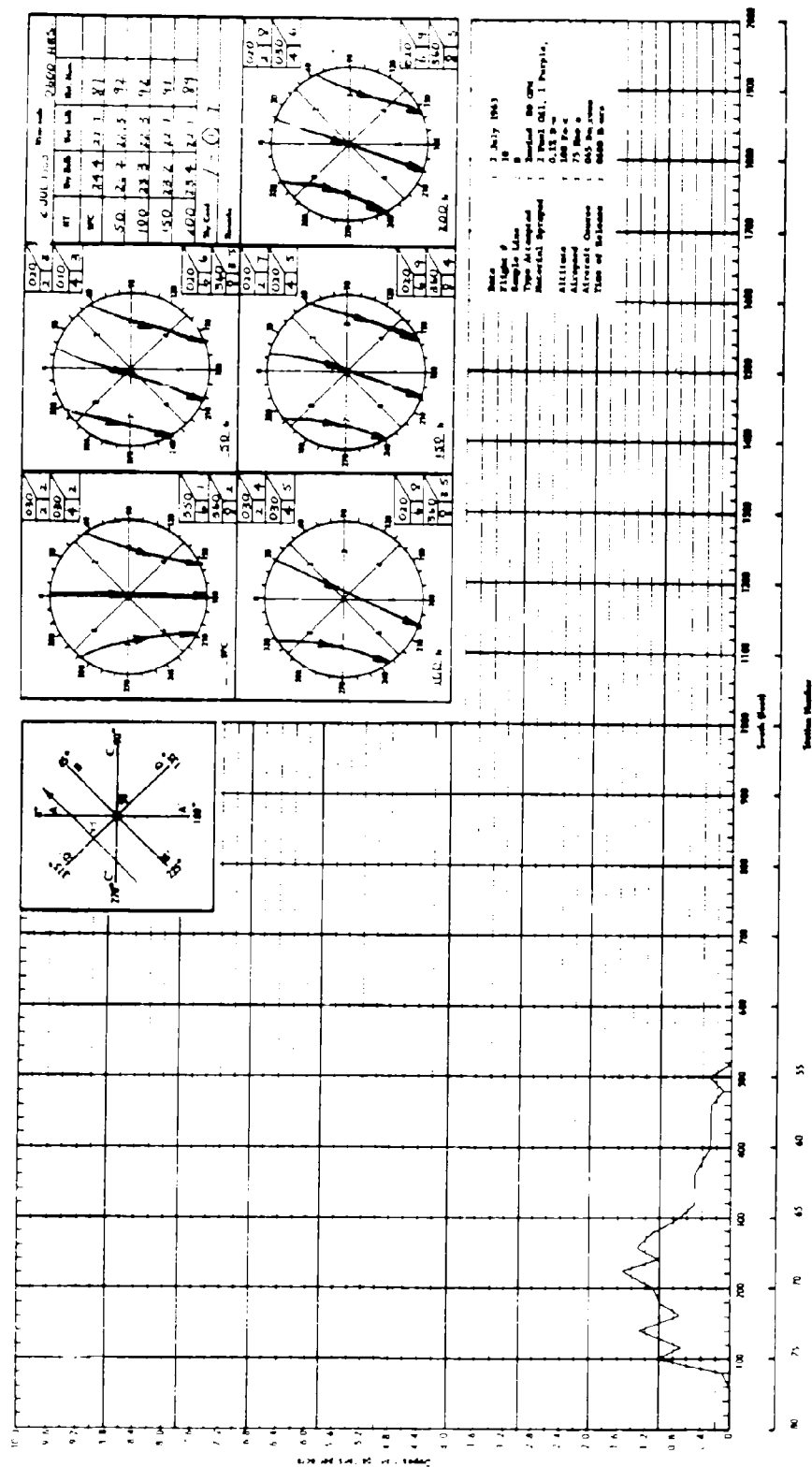
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 2 July 1963 SYSTEM: HIDAL
 FLIGHT #: 10 AIRSPEED: 75 Knots
 SAMPLE LINE: D ALTITUDE: 100 Feet
 TIME OF RELEASE: 0600 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 08 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------------|--------|---------|--------|-------------------------|--------|---------|--------|
| Stations 1 - 54 Blank | | | | 55 | 0.3 | | |
| | | 56 | 0.1 | | | | |
| | | 57 | 0.3 | | | | |
| | | 58 | 0.3 | | | | |
| | | 59 | 0.3 | | | | |
| | | 60 | 0.3 | | | | |
| | | 61 | 0.4 | | | | |
| | | 62 | 0.5 | | | | |
| | | 63 | 0.5 | | | | |
| | | 64 | 0.5 | | | | |
| | | 65 | 0.7 | | | | |
| | | 66 | 1.1 | | | | |
| | | 67 | 1.3 | | | | |
| | | 68 | 1.0 | | | | |
| | | 69 | 1.5 | | | | |
| | | 70 | 1.1 | | | | |
| | | 71 | 1.0 | | | | |
| | | 72 | 0.7 | | | | |
| | | 73 | 1.3 | | | | |
| | | 74 | 0.7 | | | | |
| | | 75 | 1.0 | | | | |
| | | 76 | 0.1 | | | | |
| | | | | Stations 77 - 100 Blank | | | |

Total 15.0



MASS MEDIAN DIAMETER

DATE: 2 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT NO: 11 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 80 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|----------------|
| 72 | 3 | 5400 | | | |
| 74 | 1 | 4300* | | | |
| 73 | 7 | 4200 | | | |
| 74 | 2 | 4100 | | | |
| 72 | 5 | 4000 | 73 | 1 | 100 (smallest) |
| 73 | 6 | 3900 | | | |
| 72 | 4 | 3800 | | | |
| 73 | 8 | 3700 | | | |
| 71 | 10 | 3600 | | | |
| 73 | 9 | 3500 | | | |

$$MMD = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{4300}{6.355 \times 2.2} = 308.2 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(5400)}{6.430} = \frac{5400}{6.430} = 829.1 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 2 July 1963 SYSTEM: HIDAL
 FLIGHT #: 11 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 50 Feet
 TIME OF RELEASE: 0618 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 08 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------|--------|---------|--------|---------|--------|
| Stations 1 - 66 | Blank | 67 | 0.4 | | | | |
| | | 68 | 1.3 | | | | |
| | | 69 | 0.4 | | | | |
| | | 70 | 1.6 | | | | |
| | | 71 | 1.4 | | | | |
| | | 72 | 1.5 | | | | |
| | | 73 | 0.7 | | | | |
| | | 74 | 0.8 | | | | |
| | | 75 | 0.7 | | | | |
| | | 76 | 2.8 | | | | |
| | | 77 | 1.8 | | | | |
| | | 78 | 0.5 | | | | |
| | | 79 | 0.2 | | | | |
| | | Stations 80 - 100 | Blank | | | | |

Total 14.1

MASS MEDIAN DIAMETER

DATE: 2 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 12 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 80 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|----------------|
| 21 | 1 | 4400 | | | |
| 25 | 4 | 3700* | | | |
| 23 | 2 | 3600 | | | |
| 20 | 6 | 3500 | | | |
| 24 | 9 | 3400 | 24 | 1 | 100 (smallest) |
| 22 | 5 | 3300 | | | |
| 23 | 3 | 3200 | | | |
| 20 | 8 | 3100 | | | |
| 20 | 7 | 3000 | | | |
| 24 | 11 | 2900 | | | |
| 24 | 10 | 2800 | | | |

$$MMD = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{3700}{6.355 \times 2.2} = 269.5 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(4400)}{6.430} = \frac{4400}{6.430} = 692.4 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 90 GPM
 DATE: 2 July 1963 SYSTEM: HIDAL
 FLIGHT #: 12 AIRSPEED: 75 Knots
 SPEED: C ALTITUDE: 50 Feet
 TIME OF RELEASE: 0619 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 07 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------|--------|---------|--------|---------|--------|
| Stations 1 - 16 | Blank | 17 | 0.2 | | | | |
| | | 18 | 1.0 | | | | |
| | | 19 | 1.4 | | | | |
| | | 20 | 1.0 | | | | |
| | | 21 | 0.4 | | | | |
| | | 22 | 0.3 | | | | |
| | | 23 | 0.3 | | | | |
| | | 24 | 0.3 | | | | |
| | | 25 | 0.7 | | | | |
| | | 26 | 2.5 | | | | |
| | | 27 | 1.0 | | | | |
| | | 28 | 1.0 | | | | |
| | | 29 | 0.3 | | | | |
| | | Stations 30 - 100 | Blank | | | | |

% Recovery - 42.7

Total 10.0

H-34/HIDAL GROUND FLOW & FLIGHT DATA

| | |
|---|---------------------------------------|
| DATE CALIBRATED: <u>1 July 1963</u> | DATE TEST FLOWN: <u>5 July 1963</u> |
| LIQUID SPRAYED: <u>2 Fuel Oil, 1 Purple</u> | TOTAL NOZZLES OPEN: <u>60</u> |
| NOZZLE TYPE: <u>8015</u> | LIQUID TEMP: <u>----</u> |
| DURATION OF SPRAY: <u>30</u> Sec. | PUMP PRESSURE: <u>32</u> PSI |
| TOTAL AMOUNT SPRAYED: <u>38.5</u> Gal. | BOOM PRESSURE: <u>30</u> PSI |
| | FLOW RATE CALIBRATED: <u>77.0</u> GPM |

OPERATIONAL DATA DURING FLIGHT

Above information same for Runs 1 - 8.

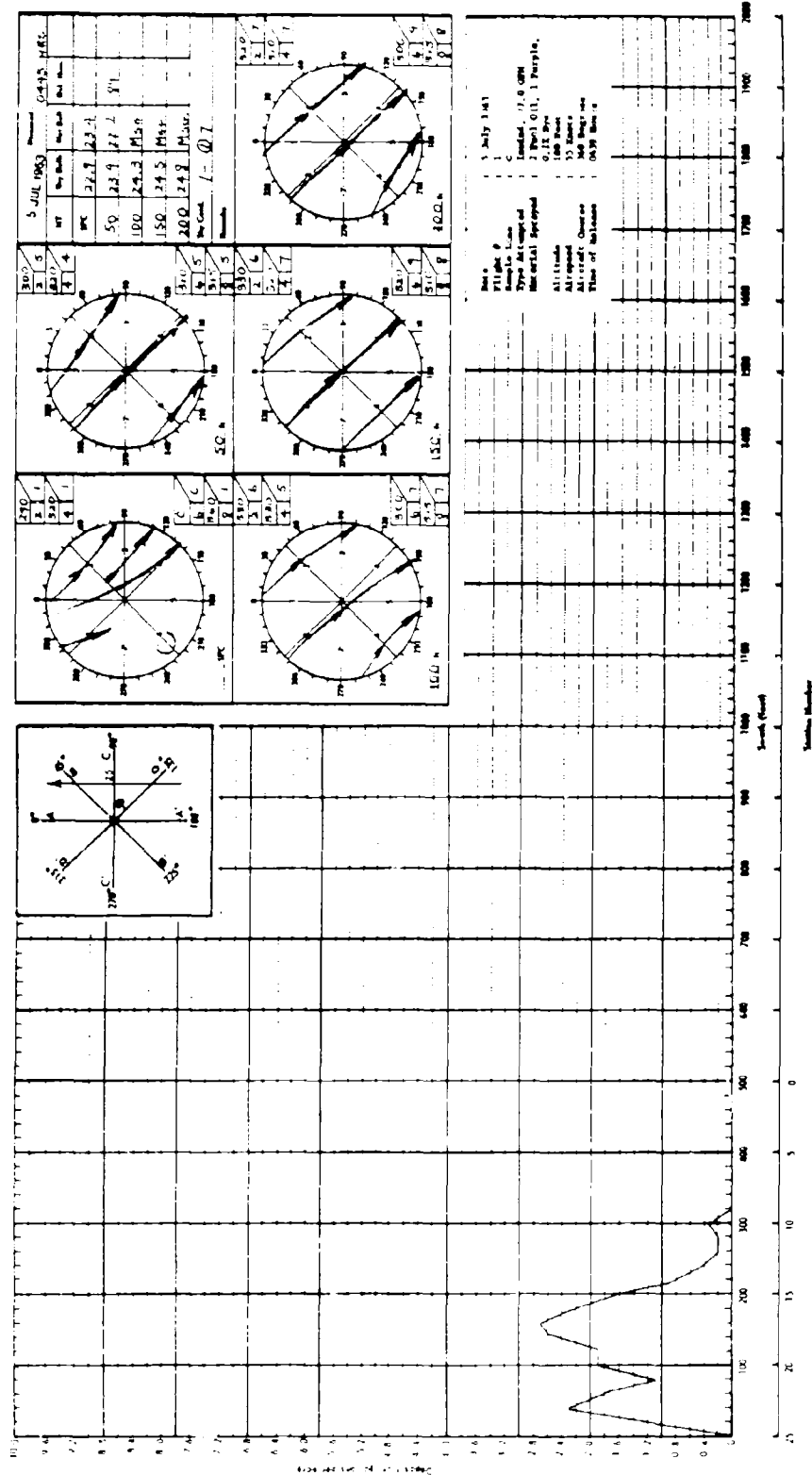
MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 77.0 GPM
 DATE: 5 July 1963 SYSTEM: RIDAL
 FLIGHT #: 1 AIRSPEED: 55 Knots
 SAMPLE LINE: C ALTITUDE: 100 Feet
 TIME OF RELEASE: 0439 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 08 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 9 Blank

10 0.3
 11 0.2
 12 0.2
 13 0.5
 14 0.9
 15 1.6
 16 2.3
 17 2.7
 18 2.6
 19 1.9
 20 1.9
 21 1.1
 22 1.7
 23 2.3
 24 1.3
 Stations 25 - 100 Blank

Total 21.5



MASS MEDIAN DIAMETER

DATE: 5 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 2 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 77.0 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|------|
| 75 | 1 | 5200* | | | |
| 75 | 3 | 5100 | | | |
| 75 | 2 | 5000 | | | |
| 75 | 6 | 4800 | 62 | 1A | 100 |
| 75 | 5 | 4700 | | | |
| 75 | 4 | 4600 | | | |
| 75 | 7 | 4400 | | | |
| 75 | 8 | 4300 | | | |
| 75 | 9 | 4200 | | | |
| 75 | 10 | 4100 | | | |

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{5200}{6.355 \times 2.2} = 364.0 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(5200)}{6.430} = \frac{5200}{6.430} = 800.9 \text{ Microns}$$

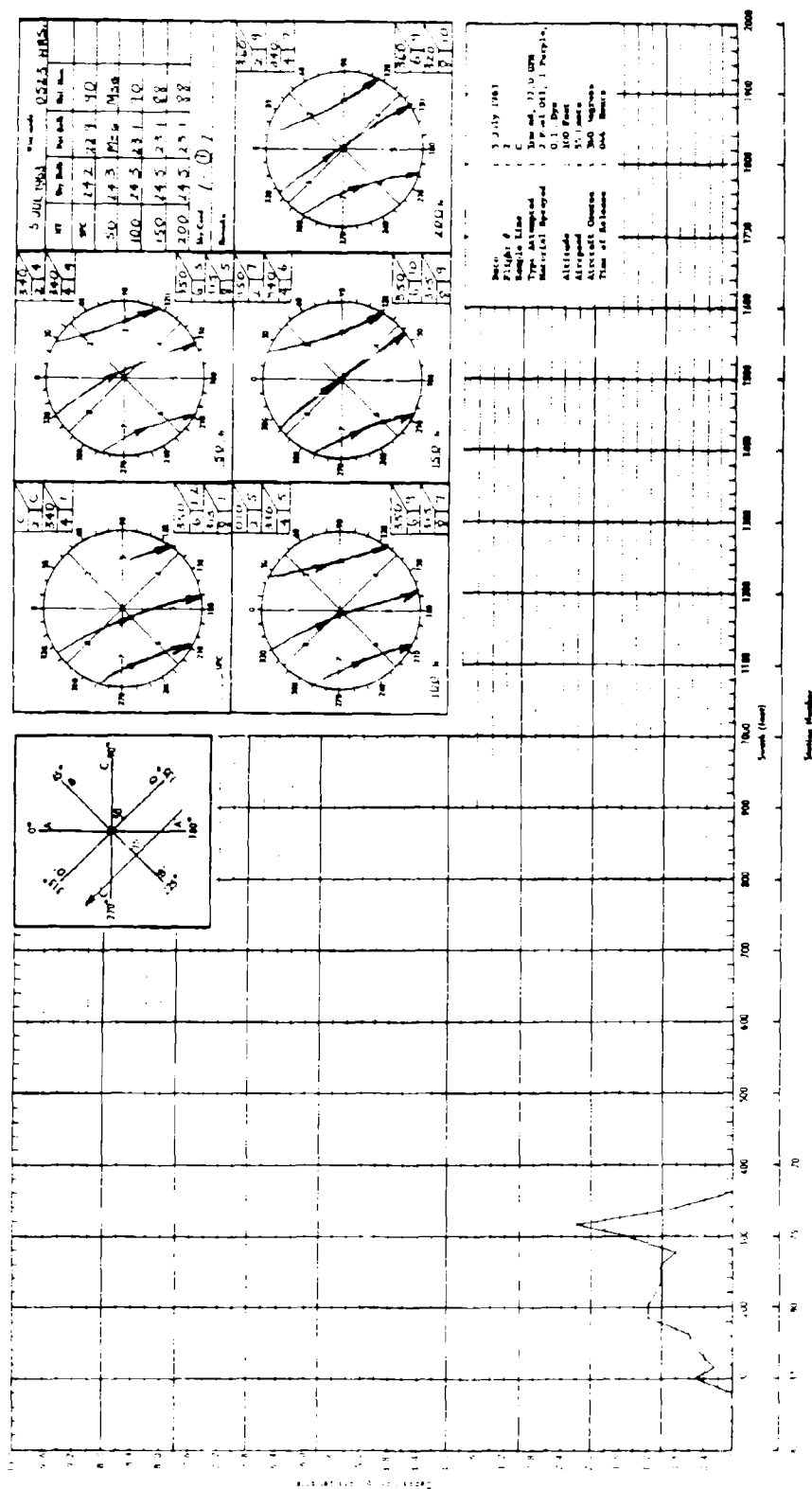
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 77.0 GPM
 DATE: 5 July 1963 SYSTEM: HIDAL
 FLIGHT #: 2 AIRSPEED: 55 Knots
 SAMPLE LINE: C ALTITUDE: 100 Feet
 TIME OF RELEASE: 0441 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 10 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|---------|--------|-------------------|--------|---------|--------|
| Stations 1 - 58 | Blank | | | 59 | 0.3 | | |
| | | | | 60 | 0.5 | | |
| | | | | 61 | 0.6 | | |
| | | | | 62 | 0.4 | | |
| | | | | 63 | 0.9 | | |
| | | | | 64 | 0.7 | | |
| | | | | 65 | 0.8 | | |
| | | | | 66 | 1.3 | | |
| | | | | 67 | 2.0 | | |
| | | | | 68 | 2.5 | | |
| | | | | 69 | 1.5 | | |
| | | | | 70 | 1.8 | | |
| | | | | 71 | 1.2 | | |
| | | | | 72 | 1.6 | | |
| | | | | 73 | 1.0 | | |
| | | | | 74 | 4.3 | | |
| | | | | 75 | 0.6 | | |
| | | | | 76 | 0.2 | | |
| | | | | Stations 77 - 100 | Blank | | |

Total 21.7



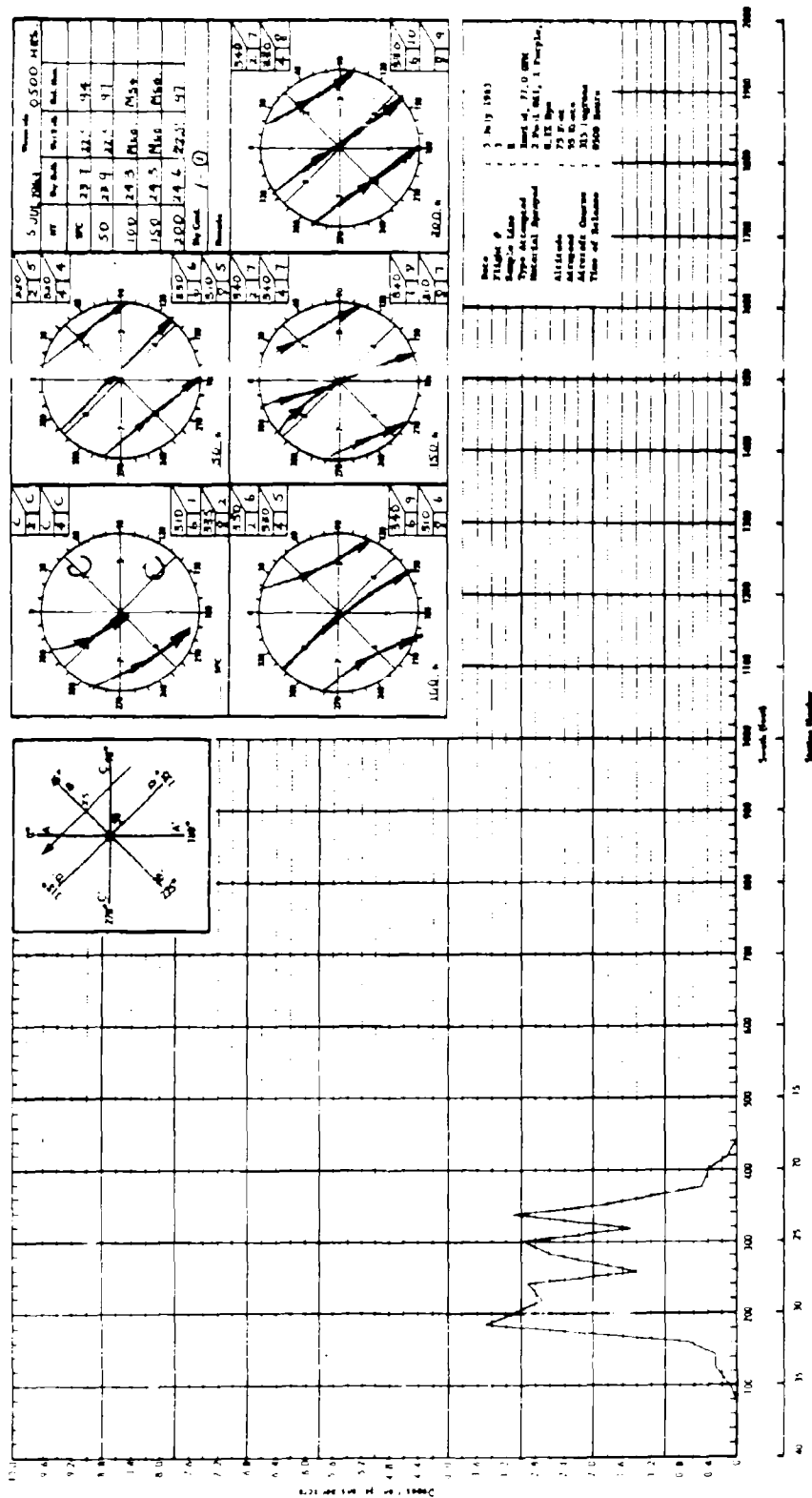
MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 77.0 GPM
 DATE: 5 July 1963 SYSTEM: HIDAL
 FLIGHT #: 3 AIRSPEED: 55 Knots
 SAMPLE LINE: B ALTITUDE: 75 Feet
 TIME OF RELEASE: 0500 Hour AIRCRAFT COURSE: 315 Degrees
 DURATION: 18 Sec.

| <u>STATION</u> | <u>G.P.A.</u> | <u>STATION</u> | <u>G.P.A.</u> | <u>STATION</u> | <u>G.P.A.</u> | <u>STATION</u> | <u>G.P.A.</u> |
|-----------------|---------------|-------------------|---------------|----------------|---------------|----------------|---------------|
| Stations 1 - 17 | Blank | 18 | 0.0 | | | | |
| | | 19 | 0.1 | | | | |
| | | 20 | 0.4 | | | | |
| | | 21 | 0.5 | | | | |
| | | 22 | 1.9 | | | | |
| | | 23 | 3.1 | | | | |
| | | 24 | 1.5 | | | | |
| | | 25 | 3.0 | | | | |
| | | 26 | 2.6 | | | | |
| | | 27 | 1.4 | | | | |
| | | 28 | 2.9 | | | | |
| | | 29 | 2.7 | | | | |
| | | 30 | 3.1 | | | | |
| | | 31 | 3.5 | | | | |
| | | 32 | 0.7 | | | | |
| | | 33 | 0.3 | | | | |
| | | 34 | 0.3 | | | | |
| | | 35 | 0.1 | | | | |
| | | 36 | 0.0 | | | | |
| | | Stations 37 - 100 | Blank | | | | |

% Recovery - 89.8

Total 28.1



MASS MEDIAN DIAMETER

DATE: 5 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 4 PAPER: Kromskote, white
 SAMPLE LINE: B MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 77.0 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|------|
| 78 | 5 | 4300* | | | |
| 79 | 2 | 4100 | | | |
| 78 | 4 | 4000 | | | |
| 79 | 3 | 3900 | | | |
| 79 | 1 | 3800 | 82 | 1A | 100 |
| 78 | 6 | 3700 | | | |
| 75 | 7 | 3500 | | | |
| 79 | 9 | 3400 | | | |
| 79 | 10 | 3300 | | | |
| 78 | 8 | 3200 | | | |

MMD = $\frac{67.72+0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{4300}{6.355 \times 2.2} = 308.2 \text{ Microns}$

Max. Sph. Dia. = $\frac{67.72+0.1420(4300)}{6.430} = \frac{4300}{6.430} = 678.2 \text{ Microns}$

Min. Sph. Dia. = 63 Microns

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 77.0 GPM
 DATE: 5 July 1963 SYSTEM: HIDAL
 FLIGHT #: 4 AIRSPEED: 55 Knots
 SAMPLE LINE: B ALTITUDE: 75 Feet
 TIME OF RELEASE: 0502 Hours AIRCRAFT COURSE: 315 Degrees
 DURATION: 11 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 71 Blank

72 0.1
 73 3.6
 74 2.2
 75 1.7
 76 0.9
 77 0.9
 78 1.5
 79 1.5
 80 1.3
 81 2.4
 82 0.2
 83 0.0

Stations 84 - 100 Blank

% Recovery - 52.1

Total 16.3

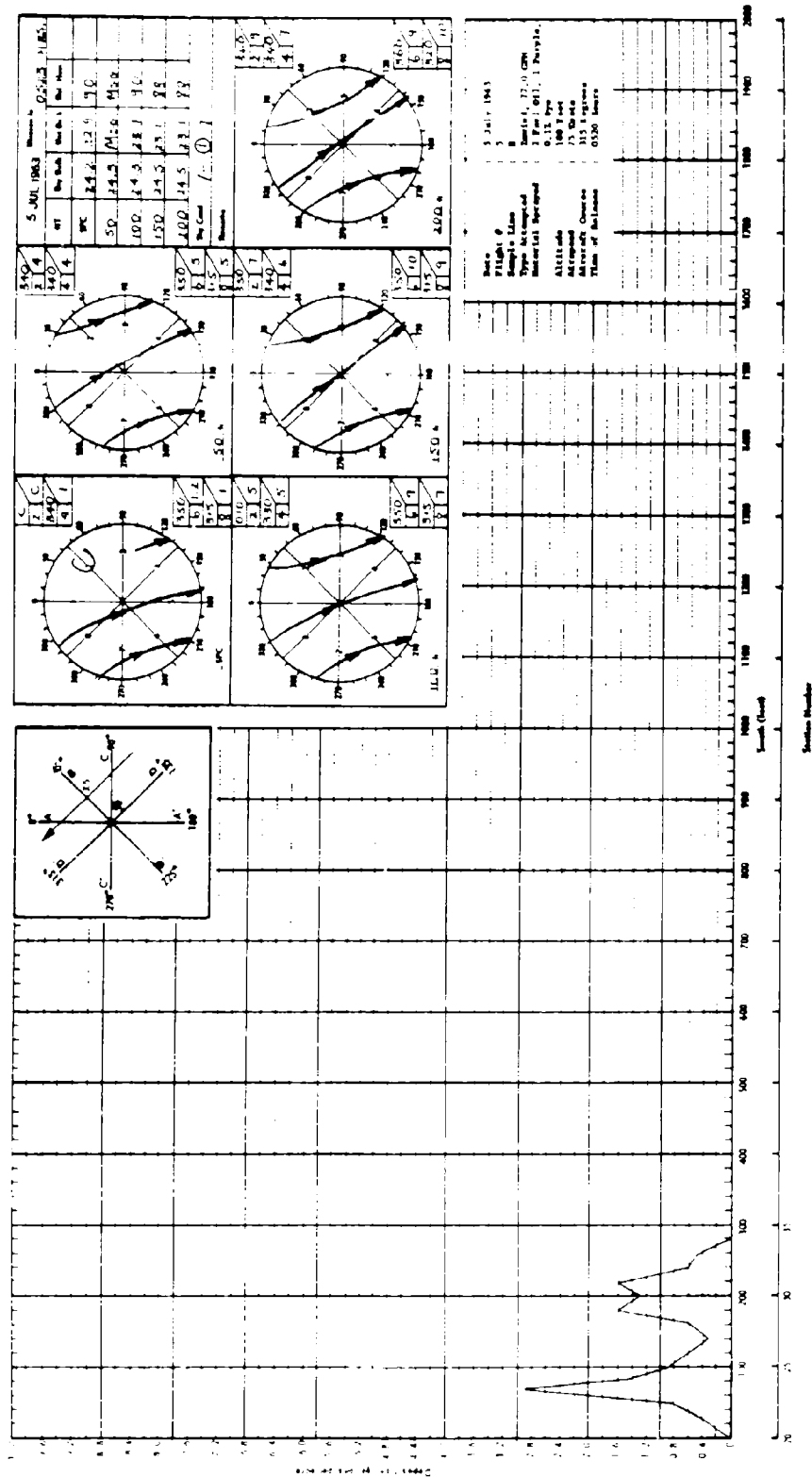
MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 77.0 GPM
 DATE: 5 July 1963 SYSTEM: HIDAL
 FLIGHT #: 5 AIRSPEED: 75 Knots
 SAMPLE LINE: B ALTITUDE: 100 Feet
 TIME OF RELEASE: 0520 Hours AIRCRAFT COURSE: 315 Degrees
 DURATION: 08 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------|--------|---------|--------|---------|--------|
| Stations 1 - 20 | Blank | 21 | 0.3 | | | | |
| | | 22 | 0.8 | | | | |
| | | 23 | 2.9 | | | | |
| | | 24 | 1.4 | | | | |
| | | 25 | 0.9 | | | | |
| | | 26 | 0.6 | | | | |
| | | 27 | 0.3 | | | | |
| | | 28 | 0.6 | | | | |
| | | 29 | 1.6 | | | | |
| | | 30 | 1.3 | | | | |
| | | 31 | 1.6 | | | | |
| | | 32 | 0.6 | | | | |
| | | 33 | 0.5 | | | | |
| | | Stations 34 - 100 | Blank | | | | |

% Recovery - 58.3

Total 13.4



MASS MEDIAN DIAMETER

DATE: 5 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 6 PAPER: Kromekote, white
 SAMPLE LINE: B MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 77.0 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|------|
| 78 | 1 | 3700 | | | |
| 78 | 2 | 3200* | | | |
| 77 | 3 | 3100 | | | |
| 78 | 5 | 3000 | 77 | 1A | 100 |
| 78 | 7 | 2900 | | | |
| 77 | 4 | 2800 | | | |
| 78 | 6 | 2700 | | | |
| 78 | 8 | 2600 | | | |
| 78 | 9 | 2500 | | | |
| 78 | 10 | 2400 | | | |

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} - \frac{3200}{6.355 \times 2.2} = 237.0 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(3700)}{6.430} = \frac{3700}{6.430} = 593.0 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 77.0 GPM
 DATE: 5 July 1963 SYSTEM: HIDAL
 FLIGHT #: 6 AIRSPEED: 75 Knots
 SAMPLE LINE: B ALTITUDE: 100 Feet
 TIME OF RELEASE: 0521 Hours AIRCRAFT COURSE: 315 Degrees
 DURATION: 10 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 72 Blank

| | |
|----|-----|
| 73 | 0.8 |
| 74 | 2.2 |
| 75 | 1.5 |
| 76 | 0.8 |
| 77 | 1.0 |
| 78 | 1.0 |
| 79 | 1.1 |
| 80 | 1.2 |
| 81 | 1.2 |
| 82 | 0.6 |
| 83 | 0.5 |
| 84 | 0.3 |
| 85 | 0.5 |

Stations 86 - 100 Blank

Total 12.7

MASS MEDIAN DIAMETER

DATE: 5 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 7PAPER: Kromekote, whiteSAMPLE LINE: CMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 77.0 GPMSYSTEM: HIDAL

| SIA. | DROP # | SIZE | SIA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 25 | 1 | 3000* | | | |
| 25 | 2 | 2900 | | | |
| 17 | 3 | 2800 | | | |
| 18 | 4 | 2700 | | | |
| 25 | 6 | 2600 | 18 | 1A | 100(smallest) |
| 18 | 5 | 2500 | | | |
| 25 | 8 | 2400 | | | |
| 18 | 7 | 2300 | | | |
| 15 | 9 | 2200 | | | |
| 15 | 10 | 2100 | | | |

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{3000}{6.355 \times 2.2} = 224.4 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(3000)}{6.430} = \frac{3000}{6.430} = 493.7 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 77.0 GPM
 DATE: 5 July 1963 SYSTEM: HIDAL
 FLIGHT #: 7 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0630 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 09 Sec.

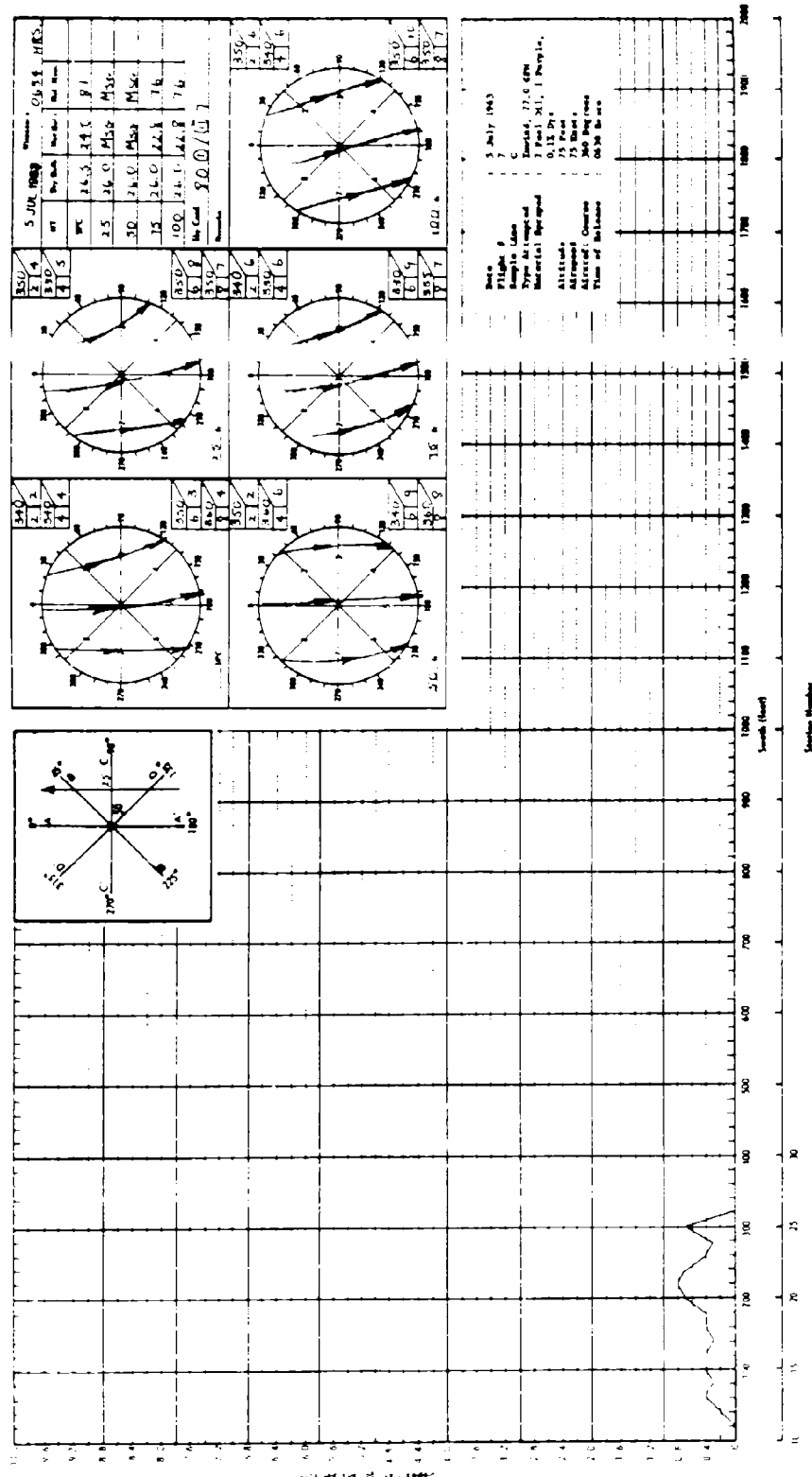
STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 10 Blank

| | |
|----|-----|
| 11 | 0.0 |
| 12 | 0.2 |
| 13 | 0.4 |
| 14 | 0.3 |
| 15 | 0.4 |
| 16 | 0.4 |
| 17 | 0.3 |
| 18 | 0.4 |
| 19 | 0.4 |
| 20 | 0.7 |
| 21 | 0.8 |
| 22 | 0.7 |
| 23 | 0.4 |
| 24 | 0.3 |
| 25 | 0.7 |

Stations 26 - 100 Blank

% Recovery - 27.8

Total 6.0



MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 77.0 GPM
 DATE: 5 July 1963 SYSTEM: HIDAL
 FLIGHT #: 8 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0632 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 12 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 65 Blank

66 0.1
 67 0.4
 68 0.7
 69 0.8
 70 0.4
 71 0.3
 72 0.2
 73 0.2
 74 0.4
 75 0.3
 76 0.3
 77 0.1
 78 0.0

Stations 79 - 100 Blank

2 Recovery - 18.3

Total 4.2

H-34/HIDAL GROUND FLOW & FLIGHT DATA

| | |
|---|--|
| DATE CALIBRATED: <u>6 July 1963</u> | DATE TEST FLOWN: <u>7 July 1963</u> |
| LIQUID SPRAYED: <u>2 Fuel Oil, 1 Purple</u> | TOTAL NOZZLES OPEN: <u>60</u> |
| NOZZLE TYPE: <u>8010</u> | LIQUID TEMP: <u>39° C</u> |
| DURATION OF SPRAY: <u>30</u> <u>Sec.</u> | BOOM PRESSURE: <u>54-55</u> <u>PSI</u> |
| TOTAL AMOUNT SPRAYED: <u>35.5</u> <u>Gal.</u> | FLOW RATE CALIBRATED: <u>71</u> <u>GPM</u> |

OPERATIONAL DATA DURING FLIGHT

Above information same for Runs 1 - 6.

| | |
|---|--|
| DATE CALIBRATED: <u>6 July 1963</u> | DATE TEST FLOWN: <u>7 July 1963</u> |
| LIQUID SPRAYED: <u>2 Fuel Oil, 1 Purple</u> | TOTAL NOZZLES OPEN: <u>60</u> |
| NOZZLE TYPE: <u>8015</u> | LIQUID TEMP: <u>33.5° C</u> |
| DURATION OF SPRAY: <u>30</u> <u>Sec.</u> | PUMP PRESSURE: <u>38-28</u> <u>PSI</u> |
| TOTAL AMOUNT SPRAYED: <u>39.5</u> <u>Gal.</u> | FLOW RATE CALIBRATED: <u>80</u> <u>GPM</u> |

OPERATIONAL DATA DURING FLIGHT

Above information same for Runs 7 - 16.

REMARKS: Pump cavitating after 20 seconds due to low level of liquid in tanks on run #16.

MASS MEDIAN DIAMETER

DATE: 7 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT NO.: 1 PAPER: Kromekote, white
 SAMPLE LINE: A MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 71.0 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 72 | 1 | 3900 | | | |
| 70 | 2 | 3100* | | | |
| 72 | 6 | 3000 | | | |
| 72 | 5 | 2900 | | | |
| 72 | 8 | 2800 | 70 | 1A | 100(smallest) |
| 70 | 3 | 2700 | | | |
| 70 | 4 | 2600 | | | |
| 72 | 7 | 2500 | | | |
| 70 | 10 | 2400 | | | |
| 70 | 9 | 2300 | | | |

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{3100}{6.355 \times 2.2} = 230.8 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(3900)}{6.430} = \frac{3900}{6.430} = 621.4 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 71 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 1 AIRSPEED: 75 Knots
 SAMPLE LINE: A ALTITUDE: 100 Feet
 TIME OF RELEASE: 0413 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: ---

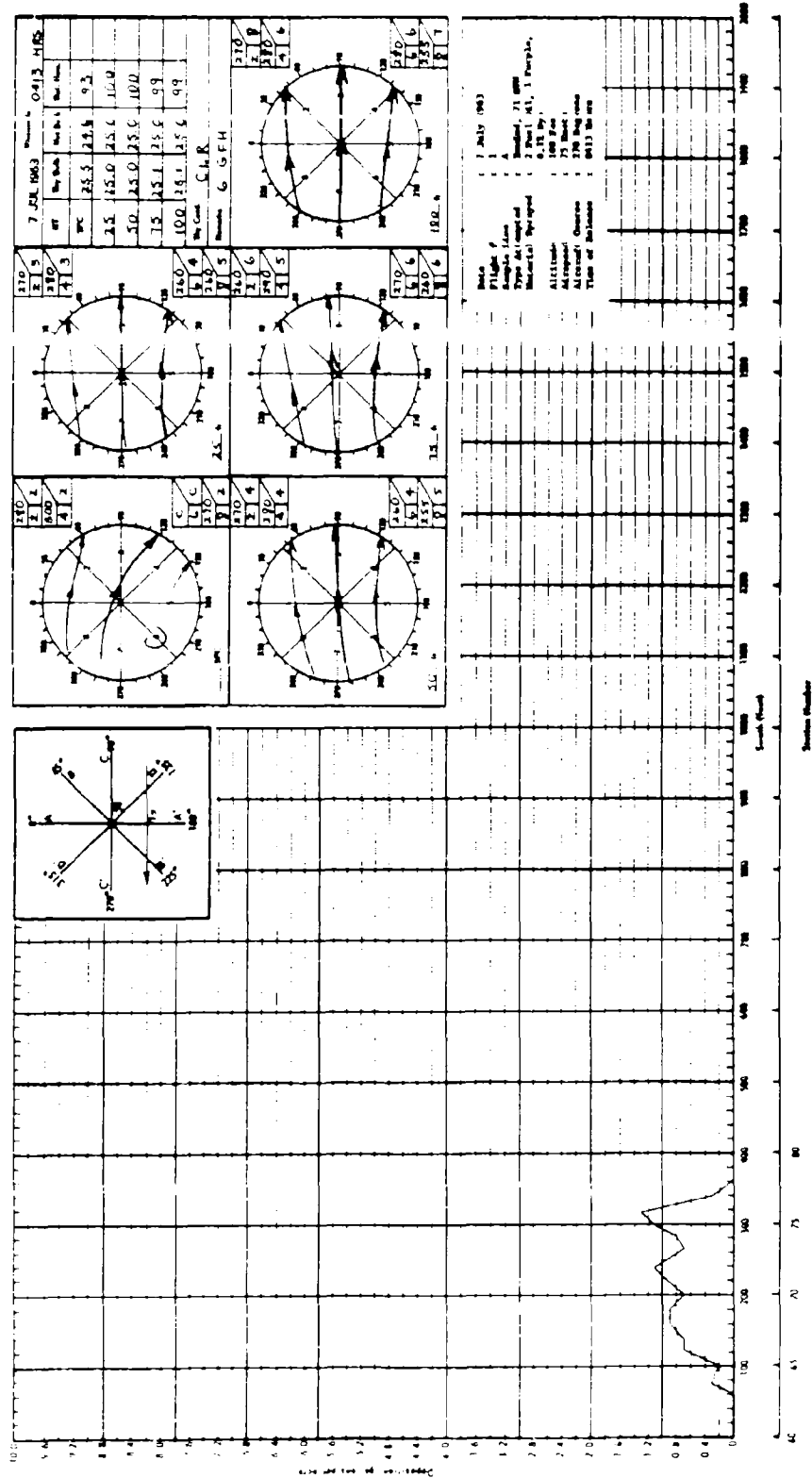
STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 63 Blank

64 0.3
 65 0.2
 66 0.7
 67 0.7
 68 0.9
 69 0.9
 70 0.7
 71 0.9
 72 1.1
 73 0.7
 74 0.8
 75 1.1
 76 1.3
 77 0.3

Stations 78 - 100 Blank

% Recovery - 52.0

Total 10.6



MASS DEPOSIT

| | |
|--|--|
| MATERIAL: <u>2 Fuel Oil, 1 Purple</u> | FLOW RATE: <u>71</u> <u>GPM</u> |
| DATE <u>7 July 1963</u> | SYSTEM: <u>HIDAL</u> |
| FLIGHT #: <u>2</u> | ALTITUDE: <u>100</u> <u>Feet</u> |
| SAMPLE LINE: <u>A</u> | AIR SPEED: <u>75</u> <u>Knots</u> |
| TIME OF RELEASE: <u>041</u> <u>Hours</u> | AIRCRAFT COURSE: <u>270</u> <u>Degrees</u> |
| DURATION: <u>08</u> <u>Sec.</u> | |

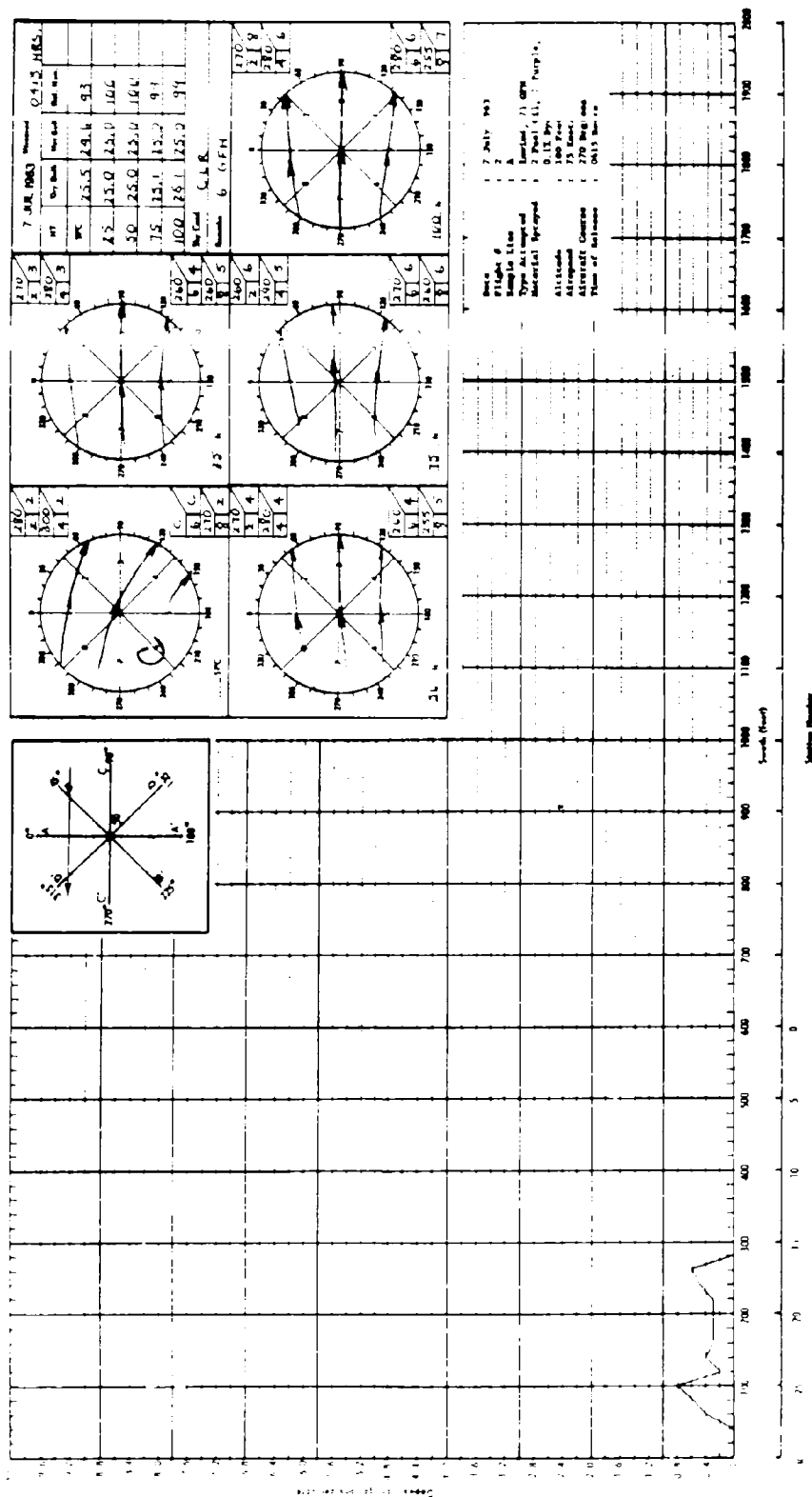
| | | | |
|-----------------------|----------------|----------------|----------------|
| STATION G.P.A. | STATION G.F.A. | STATION G.P.A. | STATION G.P.A. |
| Stations 1 - 16 Blank | | | |

| | |
|----|-----|
| 17 | 0.6 |
| 18 | 0.3 |
| 19 | 0.3 |
| 20 | 0.3 |
| 21 | 0.3 |
| 22 | 0.3 |
| 23 | 0.4 |
| 24 | 0.2 |
| 25 | 0.3 |
| 26 | 0.4 |
| 27 | 0.4 |

Stations 28 - 100 Blank

Recovery - 23,0

101



MASS MEDIAN DIAMETER

DATE: 7 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 3 PAPER: Kromekote, white
 SAMPLE LINE: A MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 71.0 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 70 | 3 | 3200* | | | |
| 72 | 1 | 3100 | | | |
| 72 | 2 | 3000 | | | |
| 69 | 4 | 2900 | | | |
| 74 | 5 | 2800 | 73 | 1A | 100(smallest) |
| 71 | 7 | 2700 | | | |
| 70 | 6 | 2600 | | | |
| 74 | 8 | 2500 | | | |
| 72 | 9 | 2400 | | | |
| 70 | 10 | 2300 | | | |

$$MMD = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{3200}{6.355 \times 2.2} = 237.3 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(3200)}{6.430} = \frac{3200}{6.430} = 522.1 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 8 71 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 3 AIRSPEED: 55 Knot
 SAMPLE LINE: A ALTITUDE: 75 Feet
 TIME OF RELEASE: 0435 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 13.5 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 65 Blank

66 0.0
 67 0.1
 68 0.6
 69 1.1
 70 1.0
 71 1.1
 72 1.1
 73 0.8
 74 0.6
 75 1.0
 76 1.0
 77 1.8
 78 2.9
 79 0.1
 80 0.0

Stations 81 - 100 Blank

Total 13.2

MASS DEPOSIT

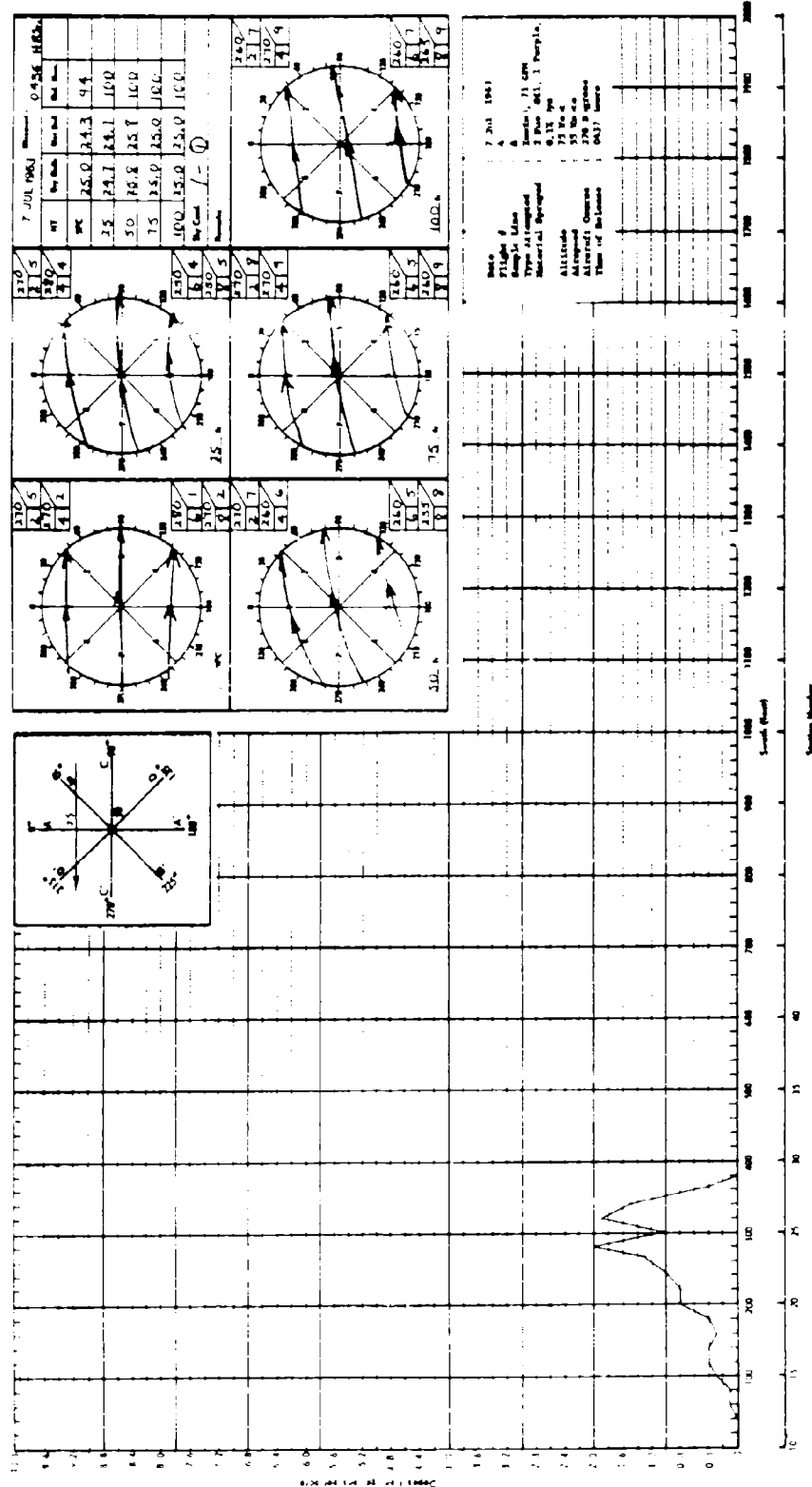
MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 71 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 4 AIRSPEED: 55 Knots
 SAMPLE LINE: A ALTITUDE: 75 Feet
 TIME OF RELEASE: 0437 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 12.5 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 11 Blank

12 0.0
 13 0.1
 14 0.1
 15 0.3
 16 0.4
 17 0.4
 18 0.3
 19 0.4
 20 0.8
 21 0.8
 22 1.0
 23 1.3
 24 2.0
 25 1.0
 26 1.9
 27 1.5
 28 0.4
 29 0.0

Stations 30 - 100 Blank

Total 12.7



MASS MEDIAN DIAMETER

DATE: 7 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 5 PAPER: Kromakote, white
 SAMPLE LINE: A MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 71.0 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 27 | 2 | 4600 | | | |
| 22 | 1 | 3800 | | | |
| 24 | 4 | 3200* | | | |
| 27 | 5 | 3100 | | | |
| 24 | 3 | 3000 | 27 | 1A | 100(smallest) |
| 27 | 7 | 2900 | | | |
| 27 | 6 | 2800 | | | |
| 27 | 9 | 2700 | | | |
| 27 | 10 | 2600 | | | |
| 27 | 8 | 2500 | | | |

$$MMD = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{3200}{6.355 \times 2.2} = 237.3 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(4600)}{6.430} = \frac{4600}{6.430} = 720.8 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 71 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 5 AIRSPEED: 55 Knots
 SAMPLE LINE: A ALTITUDE: 50 Feet
 TIME OF RELEASE: 0456 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 13 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 16 Blank

17 0.4
 18 0.8
 19 0.9
 20 1.1
 21 2.1
 22 1.8
 23 1.9
 24 1.8
 25 1.3
 26 1.8
 27 1.7
 28 2.5
 29 4.1
 30 1.7
 31 1.0
 32 0.9
 33 0.2
 Stations 34 - 100 Blank

% Recovery - 93.6

Total 26.0

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 71 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 6 AIRSPEED: 55 Knots
 SAMPLE LINE: A ALTITUDE: 50 Feet
 TIME OF RELEASE: 0457 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 10 Sec.

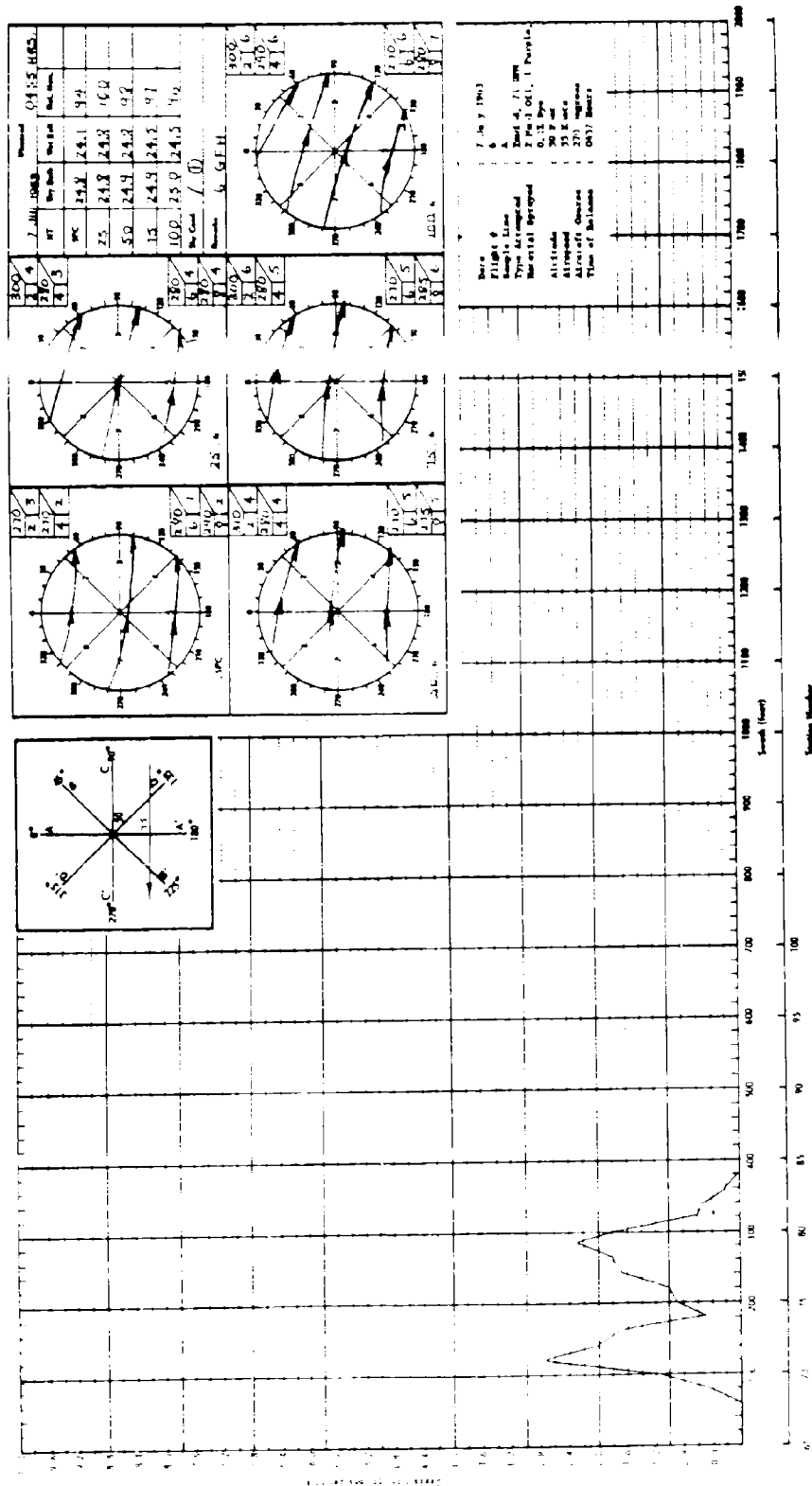
STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 68 Blank

69 0.5
 70 1.1
 71 2.7
 72 2.0
 73 1.7
 74 0.5
 75 0.9
 76 1.0
 77 1.7
 78 1.8
 79 2.3
 80 1.8
 81 0.6
 82 0.5
 83 0.3

Stations 84 - 100 Blank

% Recovery - 69.8

Total 19.4



MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 7 AIRSPEED: 75 Knots
 SAMPLE LINE: A ALTITUDE: 75 Feet
 TIME OF RELEASE: 0518 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 13 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|---------|--------|---------|--------|-------------------|--------|
| Stations 1 - 71 | Blank | | | | | 72 | 0.0 |
| | | | | | | 73 | 0.1 |
| | | | | | | 74 | 2.4 |
| | | | | | | 75 | 2.0 |
| | | | | | | 76 | 1.5 |
| | | | | | | 77 | 1.3 |
| | | | | | | 78 | 1.1 |
| | | | | | | 79 | 1.2 |
| | | | | | | 80 | 1.5 |
| | | | | | | 81 | 1.2 |
| | | | | | | 82 | 1.9 |
| | | | | | | 83 | 0.5 |
| | | | | | | 84 | 0.8 |
| | | | | | | 85 | 1.0 |
| | | | | | | 86 | 0.6 |
| | | | | | | 87 | 0.4 |
| | | | | | | 88 | 0.2 |
| | | | | | | 89 | 0.1 |
| | | | | | | 90 | 0.0 |
| | | | | | | Stations 91 - 100 | Blank |

Total 17.8

MASS MEDIAN DIAMETER

DATE: 7 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 8 PAPER: Kromakote, white
 SAMPLE LINE: A MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 80.0 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|----------------|
| 24 | 1 | 3700* | | | |
| 29 | 3 | 3500 | | | |
| 24 | 2 | 3300 | | | |
| 29 | 4 | 3200 | | | |
| 29 | 5 | 3100 | 29 | 1A | 100 (smallest) |
| 29 | 6 | 3000 | | | |
| 24 | 7 | 2900 | | | |
| 24 | 8 | 2700 | | | |
| 24 | 9 | 2600 | | | |
| 24 | 10 | 2500 | | | |

$$\text{MMD} = \frac{67.72 + 0.1420 (\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{3700}{6.355 \times 2.2} = 269.5 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420 (3700)}{6.430} = \frac{3700}{6.430} = 593.0 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 8 AIRSPEED: 75 Knots
 SAMPLE LINE: A ALTITUDE: 75 Feet
 AIRCRAFT TYPE: 500 AIRCRAFT NUMBER: 07
 DURATION: 9.5 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-------------------|--------|---------|--------|---------|--------|---------|--------|
| Stations 1 - 22 | Blank | 23 | 0.0 | | | | |
| | | 24 | 0.3 | | | | |
| | | 25 | 2.6 | | | | |
| | | 26 | 1.0 | | | | |
| | | 27 | 0.9 | | | | |
| | | 28 | 0.7 | | | | |
| | | 29 | 0.7 | | | | |
| | | 30 | 1.0 | | | | |
| | | 31 | 0.6 | | | | |
| | | 32 | 0.2 | | | | |
| | | 33 | 1.0 | | | | |
| | | 34 | 0.6 | | | | |
| | | 35 | 0.5 | | | | |
| | | 36 | 0.5 | | | | |
| | | 37 | 0.3 | | | | |
| | | 38 | 0.3 | | | | |
| | | 39 | 0.1 | | | | |
| | | 40 | 0.0 | | | | |
| Stations 41 - 100 | Blank | | | | | | |

Total 11.5

MASS MEDIAN DIAMETER

DATE: 7 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 9 PAPER: Kromakote, white
 SAMPLE LINE: A MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 80 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|----------------|
| 75 | 3 | 4100* | | | |
| 75 | 1 | 3900 | | | |
| 75 | 2 | 3800 | | | |
| 73 | 4 | 3700 | | | |
| 75 | 5 | 3600 | 90 | 1A | 100 (smallest) |
| 75 | 9 | 3500 | | | |
| 76 | 10 | 3400 | | | |
| 75 | 6 | 3300 | | | |
| 75 | 8 | 3200 | | | |
| 75 | 7 | 3100 | | | |

$$\begin{aligned}
 \text{MMD} &= \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{4100}{6.355 \times 2.2} = 295.3 \text{ Microns}
 \end{aligned}$$

$$\begin{aligned}
 \text{Max. Sph. Dia.} &= \frac{67.72 + 0.14 \cdot 20(4100)}{6.430} = \frac{4100}{6.430} = 649.8 \text{ Microns}
 \end{aligned}$$

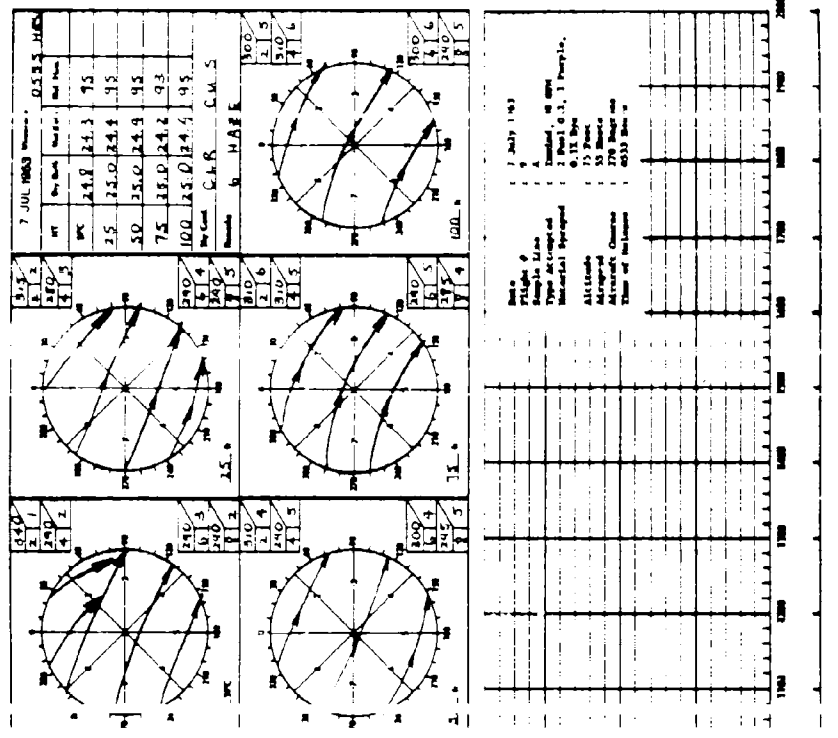
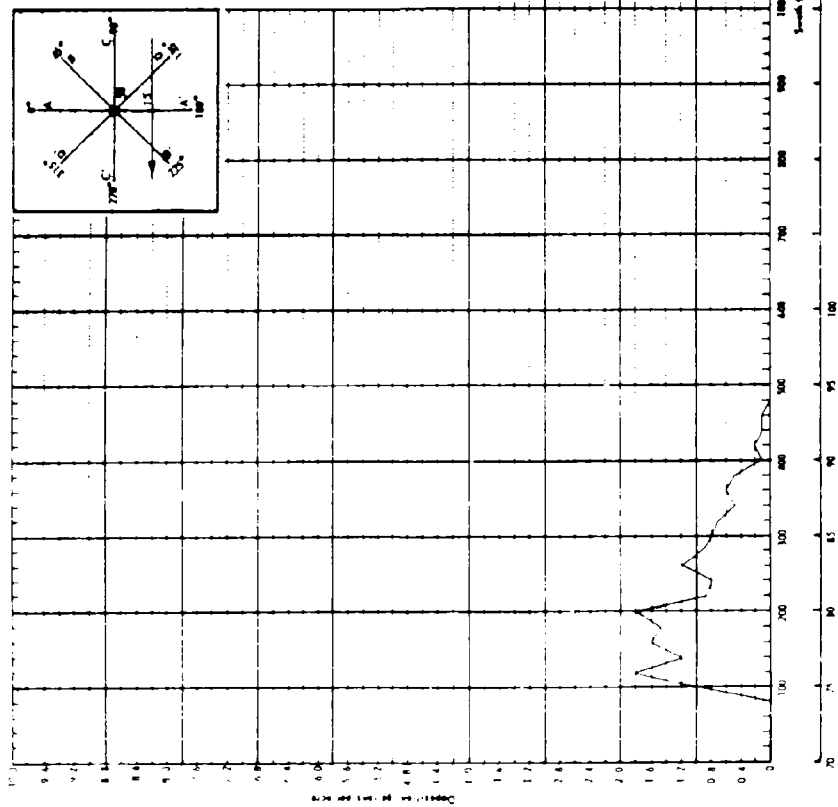
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 9 AIRSPEED: 55 Knots
 SAMPLE LINE: A ALTITUDE: 75 Feet
 TIME OF RELEASE: 0533 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 11 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|---------|--------|---------|--------|-------------------|--------|
| Stations 1 - 73 | Blank | | | | | 74 | 0.0 |
| | | | | | | 75 | 1.0 |
| | | | | | | 76 | 1.8 |
| | | | | | | 77 | 1.2 |
| | | | | | | 78 | 1.6 |
| | | | | | | 79 | 1.5 |
| | | | | | | 80 | 1.8 |
| | | | | | | 81 | 0.0 |
| | | | | | | 82 | 0.8 |
| | | | | | | 83 | 1.2 |
| | | | | | | 84 | 0.9 |
| | | | | | | 85 | 0.8 |
| | | | | | | 86 | 0.7 |
| | | | | | | 87 | 0.5 |
| | | | | | | 88 | 0.6 |
| | | | | | | 89 | 0.5 |
| | | | | | | 90 | 0.1 |
| | | | | | | 91 | 0.2 |
| | | | | | | 92 | 0.1 |
| | | | | | | 93 | 0.1 |
| | | | | | | 94 | 0.0 |
| | | | | | | 95 | 0.0 |
| | | | | | | 96 | 0.0 |
| | | | | | | Stations 97 - 100 | |
| | | | | | | Blank | |

Total 16.3

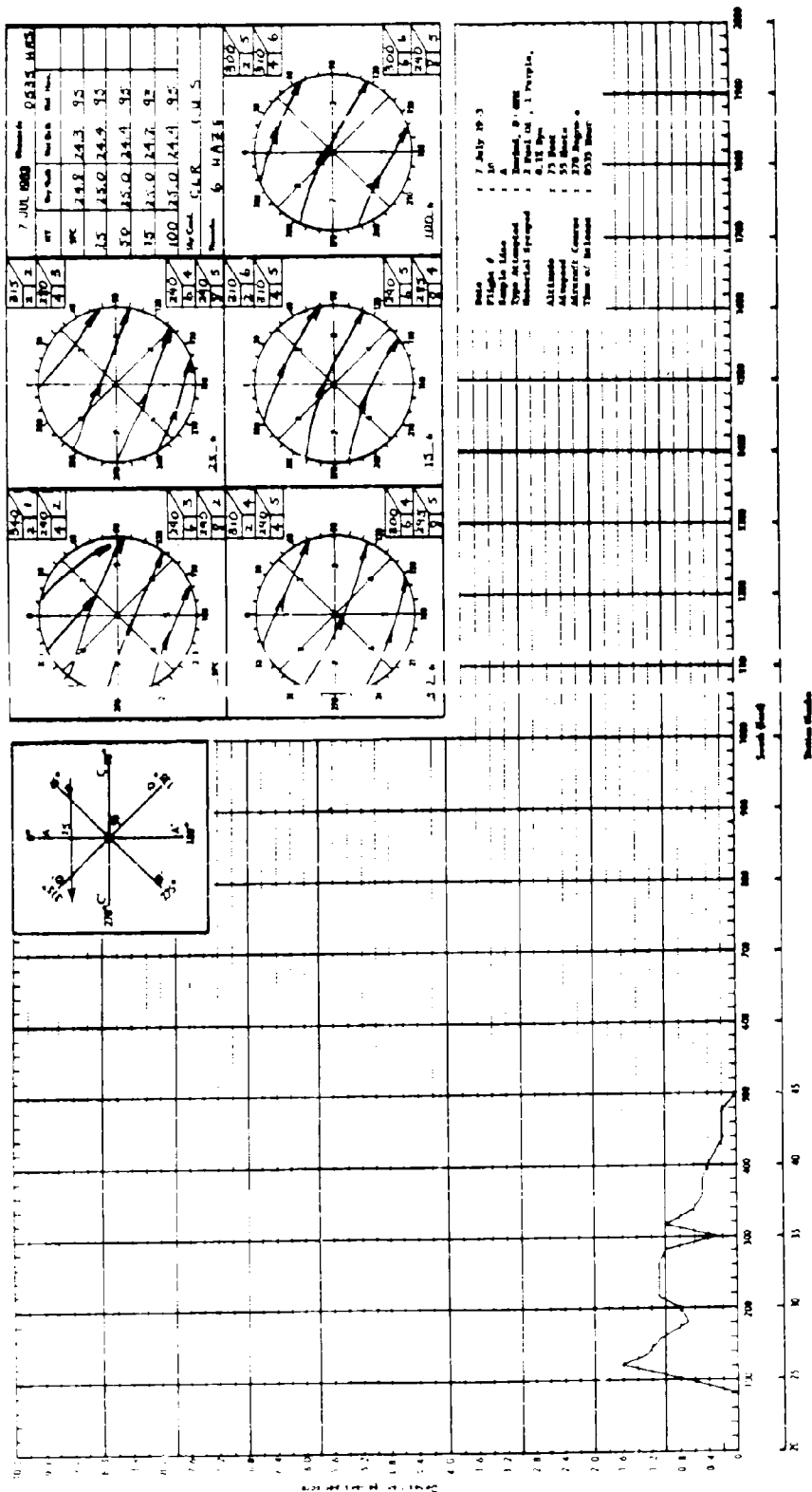


MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 10 AIRSPEED: 55 Knots
 SAMPLE LINE: A ALTITUDE: 75 Feet
 TIME OF RELEASE: 0535 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 13 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------|--------|---------|--------|---------|--------|
| Stations 1 - 23 | Blank | 24 | 0.0 | | | | |
| | | 25 | 0.7 | | | | |
| | | 26 | 1.6 | | | | |
| | | 27 | 1.3 | | | | |
| | | 28 | 1.1 | | | | |
| | | 29 | 0.7 | | | | |
| | | 30 | 0.8 | | | | |
| | | 31 | 1.1 | | | | |
| | | 32 | 1.1 | | | | |
| | | 33 | 1.1 | | | | |
| | | 34 | 1.0 | | | | |
| | | 35 | 0.3 | | | | |
| | | 36 | 1.0 | | | | |
| | | 37 | 0.6 | | | | |
| | | 38 | 0.5 | | | | |
| | | 39 | 0.5 | | | | |
| | | 40 | 0.4 | | | | |
| | | 41 | 0.3 | | | | |
| | | 42 | 0.1 | | | | |
| | | 43 | 0.1 | | | | |
| | | 44 | 0.1 | | | | |
| | | 45 | 0.0 | | | | |
| | | Stations 46 - 100 | Blank | | | | |

Total 14.4



MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 11 AIRSPEED: 55 Knots
 SAMPLE LINE: B ALTITUDE: 100 Feet
 TIME OF RELEASE: 0605 Hours AIRCRAFT COURSE: 315 Degrees
 DURATION: 19 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------|--------|---------|--------|---------|--------|
| Stations 1 - 23 | Blank | 24 | 0.0 | | | | |
| | | 25 | 0.9 | | | | |
| | | 26 | 0.7 | | | | |
| | | 27 | 0.4 | | | | |
| | | 28 | 0.8 | | | | |
| | | 29 | 0.7 | | | | |
| | | 30 | 0.5 | | | | |
| | | 31 | 0.4 | | | | |
| | | 32 | 0.5 | | | | |
| | | 33 | 0.3 | | | | |
| | | 34 | 0.9 | | | | |
| | | 35 | 1.1 | | | | |
| | | 36 | 0.4 | | | | |
| | | 37 | 0.2 | | | | |
| | | 38 | 0.0 | | | | |
| | | Stations 39 - 100 | Blank | | | | |

Total 7.6

MASS MEDIAN DIAMETER

DATE: 7 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 12 PAPER: Kromskote, white
 SAMPLE LINE: B MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 80 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|--------------|
| 81 | 4 | 4100* | | | |
| 84 | 5 | 4000 | | | |
| 77 | 1 | 3900 | | | |
| 77 | 2 | 3800 | | | |
| 77 | 3 | 3700 | 90 | 1A | 75(smallest) |
| 87 | 9 | 3500 | | | |
| 86 | 8 | 3400 | | | |
| 78 | 6 | 3200 | | | |
| 78 | 7 | 3100 | | | |
| 79 | 10 | 3000 | | | |

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{4100}{6.355 \times 2.2} = 295.3 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(4100)}{6.430} = \frac{4100}{6.430} = 649.8 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 48 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 12 AIRSPEED: 55 Knots
 SAMPLE LINE: B ALTITUDE: 100 Feet
 TIME OF RELEASE: 0607 Hours AIRCRAFT COURSE: 315 Degrees
 DURATION: 14 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------------|--------|---------|--------|-------------------|--------|---------|--------|
| Stations 1 - 76 Blank | | | | | | | |
| | | | | 77 | 0.0 | | |
| | | | | 78 | 0.4 | | |
| | | | | 79 | 1.0 | | |
| | | | | 80 | 0.8 | | |
| | | | | 81 | 0.4 | | |
| | | | | 82 | 1.4 | | |
| | | | | 83 | 0.7 | | |
| | | | | 84 | 0.9 | | |
| | | | | 85 | 0.6 | | |
| | | | | 86 | 0.6 | | |
| | | | | 87 | 0.7 | | |
| | | | | 88 | 0.6 | | |
| | | | | 89 | 0.2 | | |
| | | | | 90 | 0.5 | | |
| | | | | 91 | 0.2 | | |
| | | | | 92 | 0.2 | | |
| | | | | 93 | 0.2 | | |
| | | | | 94 | 0.1 | | |
| | | | | 95 | 0.3 | | |
| | | | | 96 | 0.2 | | |
| | | | | 97 | 0.1 | | |
| | | | | 98 | 0.0 | | |
| | | | | Stations 99 - 100 | | | |
| | | | | Blank | | | |

Total 10.1

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 13 AIRSPEED: 75 Knots
 SAMPLE LINE: B ALTITUDE: 100 Feet
 TIME OF RELEASE: 0644 Hours AIRCRAFT COURSE: 315 Degrees
 DURATION: 11.5 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 16 Blank

17 0.3
 18 0.1
 19 0.7
 20 0.9
 21 0.6
 22 0.6
 23 1.3
 24 0.8
 25 0.9
 26 0.1
 27 0.9
 28 0.5
 29 0.1
 Stations 30 - 100 Blank

Total 7.8

MASS MEDIAN DIAMETER

DATE: 7 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 14 PAPER: Kromekote, white
 SAMPLE LINE: B MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 80 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 74 | 1 | 3100 | | | |
| 74 | 2 | 3000 | | | |
| 72 | 10 | 2700 | | | |
| 70 | 9 | 2400* | | | |
| 73 | 3 | 2300 | 62 | 1A | 100(smallest) |
| 73 | 4 | 2200 | | | |
| 73 | 6 | 2100 | | | |
| 74 | 5 | 2000 | | | |
| 73 | 7 | 1900 | | | |
| 73 | 8 | 1800 | | | |

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{2400}{6.355 \times 2.2} = 185.7 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(3100)}{6.430} = \frac{3100}{6.430} = 507.9 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 14 AIRSPEED: 75 Knots
 SAMPLE LINE: E ALTITUDE: 100 Feet
 TIME OF RELEASE: 0646 Hours AIRCRAFT COURSE: 315 Degrees
 DURATION: 09 Sec.

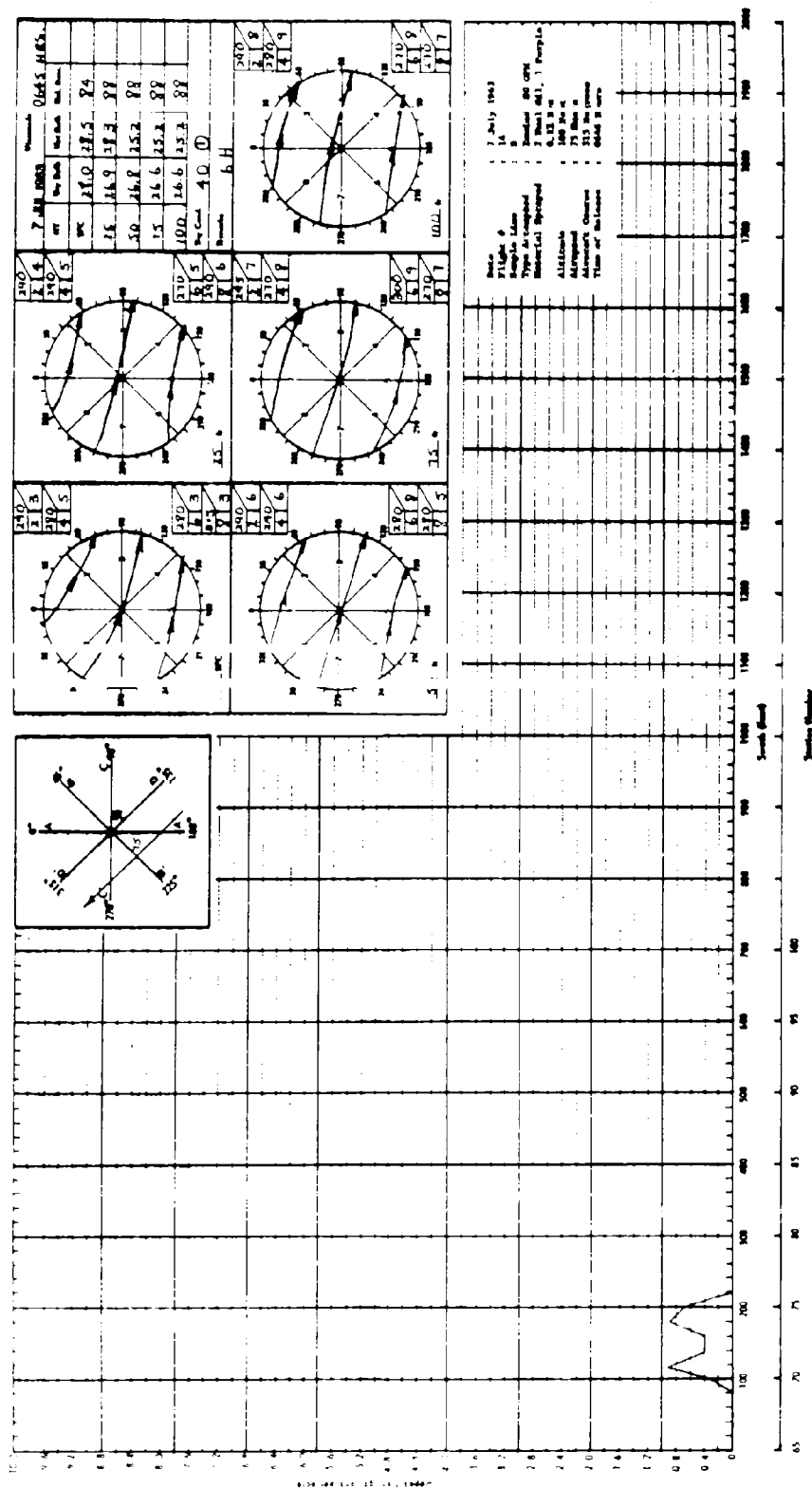
STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 69 Blank

70 0.3
 71 0.9
 72 0.4
 73 0.4
 74 0.9
 75 0.7
 76 0.0

Stations 77 - 100 Blank

% Recovery - 15.6

Total 3.6



MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 15 AIRSPEED: 55 Knots
 SAMPLE LINE: A ALTITUDE: 50 Feet
 TIME OF RELEASE: 0658 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 14 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 69 Blank

70 0.5
 71 0.3
 72 2.5
 73 2.4
 74 1.6
 75 1.6
 76 1.3
 77 0.9
 78 1.6
 79 2.4
 80 0.9
 81 0.5

Stations 82 - 100 Blank

% Recovery - 52.7

Total 16.5

MASS MEDIAN DIAMETER

DATE: 7 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 16 PAPER: Kromekote, white
 SAMPLE LINE: A MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 80 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|----------------|
| 29 | 9 | 4000* | | | |
| 25 | 4 | 3900 | | | |
| 29 | 3 | 3800 | | | |
| 28 | 1 | 3700 | | | |
| 29 | 2 | 3600 | 43 | 1A | 100 (smallest) |
| 25 | 5 | 3500 | | | |
| 27 | 10 | 3300 | | | |
| 25 | 7 | 3200 | | | |
| 25 | 6 | 3100 | | | |
| 30 | 8 | 3000 | | | |

$$MMD = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{4000}{6.355 \times 2.2} = 288.9 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(4000)}{6.430} = \frac{4000}{6.430} = 635.6 \text{ Microns}$$

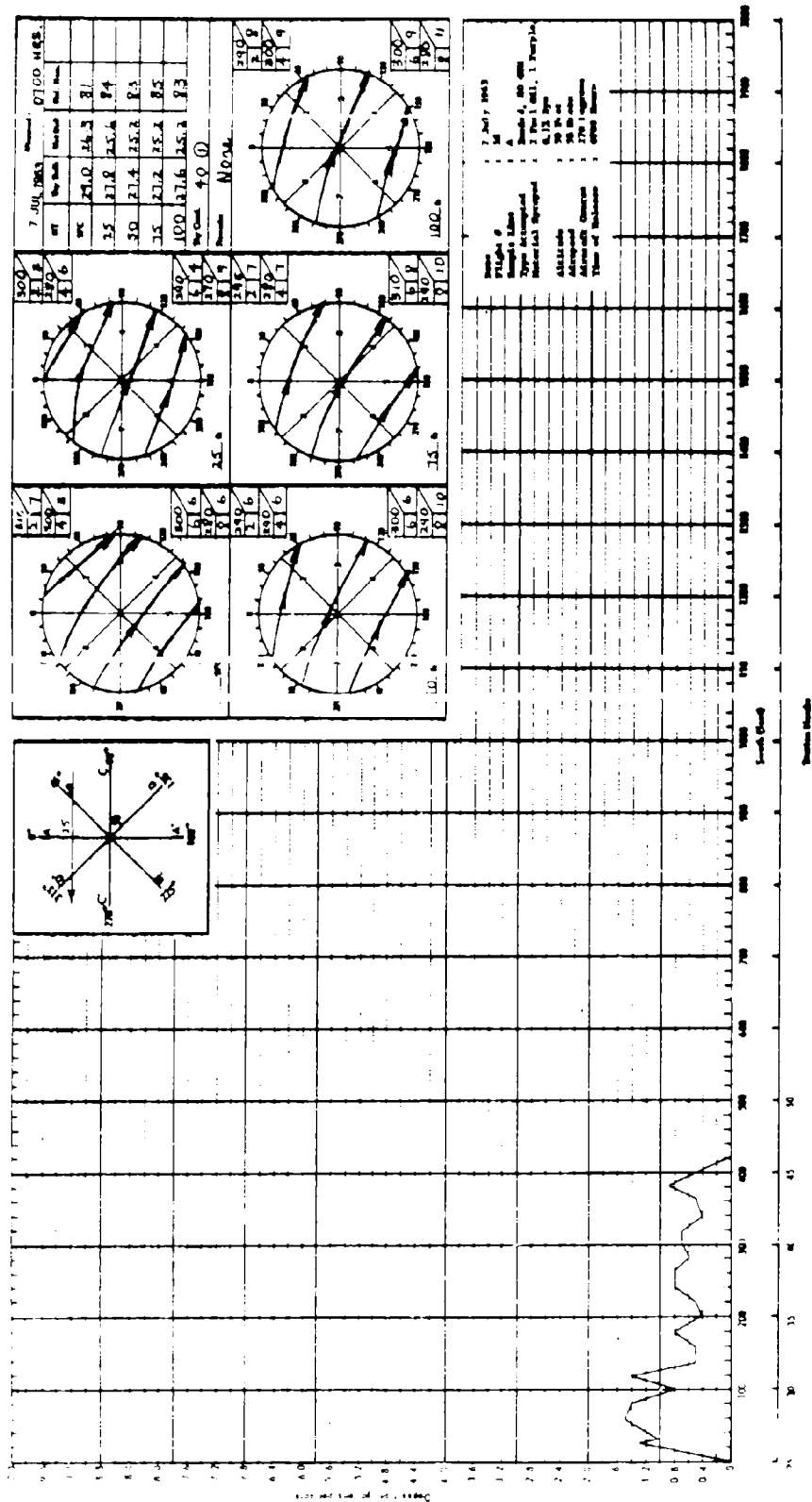
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 16 AIRSPEED: 55 Knots
 SAMPLE LINE: A ALTITUDE: 50 Feet
 TIME OF RELEASE: 0700 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 16 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------|--------|---------|--------|---------|--------|
| Stations 1 - 25 | Blank | 26 | 1.3 | | | | |
| | | 27 | 1.0 | | | | |
| | | 28 | 1.5 | | | | |
| | | 29 | 1.4 | | | | |
| | | 30 | 0.8 | | | | |
| | | 31 | 1.4 | | | | |
| | | 32 | 0.5 | | | | |
| | | 33 | 0.5 | | | | |
| | | 34 | 0.8 | | | | |
| | | 35 | 0.4 | | | | |
| | | 36 | 0.5 | | | | |
| | | 37 | 0.8 | | | | |
| | | 38 | 0.8 | | | | |
| | | 39 | 0.6 | | | | |
| | | 40 | 0.7 | | | | |
| | | 41 | 0.7 | | | | |
| | | 42 | 0.4 | | | | |
| | | 43 | 0.5 | | | | |
| | | 44 | 0.9 | | | | |
| | | 45 | 0.5 | | | | |
| | | Stations 46 - 100 | Blank | | | | |

Total 16.0



H-34/HIDAL GROUND FLOW & FLIGHT DATA

| | |
|---|--|
| DATE CALIBRATED: <u>6 July 1963</u> | DATE TEST FLOWN: <u>8 July 1963</u> |
| LIQUID SPRAYED: <u>2 Fuel Oil, 1 Purple</u> | TOTAL NOZZLES OPEN: <u>60</u> |
| NOZZLE TYPE: <u>8015</u> | LIQUID TEMP: <u>33.5° C</u> |
| DURATION OF SPRAY: <u>30</u> <u>Sec.</u> | PUMP PRESSURE: <u>38-28</u> <u>PSI</u> |
| TOTAL AMOUNT SPRAYED: <u>39.5</u> <u>Gal.</u> | FLOW RATE CALIBRATED: <u>80</u> <u>GPM</u> |

OPERATIONAL DATA DURING FLIGHT

Above information is for Runs 1 - 10.

| | |
|---|--|
| DATE CALIBRATED: <u>6 July 1963</u> | DATE TEST FLOWN: <u>8 July 1963</u> |
| LIQUID SPRAYED: <u>2 Fuel Oil, 1 Purple</u> | TOTAL NOZZLES OPEN: <u>60</u> |
| NOZZLE TYPE: <u>Check Valves</u> | LIQUID TEMP: <u>36° C</u> |
| DURATION OF SPRAY: <u>20</u> <u>Sec.</u> | PUMP PRESSURE: <u>20.5</u> <u>PSI</u> |
| TOTAL AMOUNT SPRAYED: <u>27.5</u> <u>Gal.</u> | FLOW RATE CALIBRATED: <u>83</u> <u>GPM</u> |

OPERATIONAL DATA DURING FLIGHT

Above information is for Runs 11 - 14.

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple. FLOW RATE: 80 GPM
 DATE: 8 July 1963 SYSTEM: HIDAL
 FLIGHT #: 1 AIRSPEED: 55 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0410 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 12 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|---------|--------|-------------------|--------|---------|--------|
| Stations 1 - 50 | Blank | 51 | 0.2 | 76 | 1.9 | | |
| | | 52 | 0.3 | Stations 77 - 100 | | | |
| | | 53 | 0.8 | | Blank | | |
| | | 54 | 0.6 | | | | |
| | | 55 | 0.6 | | | | |
| | | 56 | 0.6 | | | | |
| | | 57 | 0.3 | | | | |
| | | 58 | 0.3 | | | | |
| | | 59 | 0.4 | | | | |
| | | 60 | 0.4 | | | | |
| | | 61 | 0.4 | | | | |
| | | 62 | 0.4 | | | | |
| | | 63 | 0.5 | | | | |
| | | 64 | 0.8 | | | | |
| | | 65 | 1.1 | | | | |
| | | 66 | 1.0 | | | | |
| | | 67 | 1.4 | | | | |
| | | 68 | 1.9 | | | | |
| | | 69 | 2.1 | | | | |
| | | 70 | 2.1 | | | | |
| | | 71 | 1.8 | | | | |
| | | 72 | 2.3 | | | | |
| | | 73 | 1.4 | | | | |
| | | 74 | 1.2 | | | | |
| | | 75 | 3.0 | | | | |

Total 27.9

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 8 July 1963 SYSTEM: HIDAL
 FLIGHT #: 2 AIRSPEED: 55 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0413 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 13 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 10 Blank

| | |
|----|-----|
| 11 | 0.1 |
| 12 | 0.2 |
| 13 | 0.3 |
| 14 | 0.4 |
| 15 | 0.6 |
| 16 | 0.7 |
| 17 | 0.8 |
| 18 | 1.1 |
| 19 | 1.0 |
| 20 | 1.9 |
| 21 | 2.7 |
| 22 | 1.8 |
| 23 | 1.9 |
| 24 | 4.3 |
| 25 | 2.0 |
| 26 | 2.4 |

Stations 27 - 100 Blank

Total 22.2

MASS MEDIAN DIAMETER

DATE: 8 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 3 PAPER: Kromekote, white
 SAMPLE LINE: B MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 80 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|----------------|
| 24 | 2 | 4000 | | | |
| 24 | 1 | 3200* | | | |
| 20 | 3 | 3000 | | | |
| 20 | 4 | 2900 | | | |
| 20 | 5 | 2800 | 20 | 1A | 100 (smallest) |
| 20 | 6 | 2700 | | | |
| 20 | 7 | 2600 | | | |
| 20 | 10 | 2500 | | | |
| 20 | 9 | 2400 | | | |
| 20 | 8 | 2300 | | | |

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{3200}{6.355 \times 2.2} = 237.3 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(4000)}{6.430} = \frac{4000}{6.430} = 635.6 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

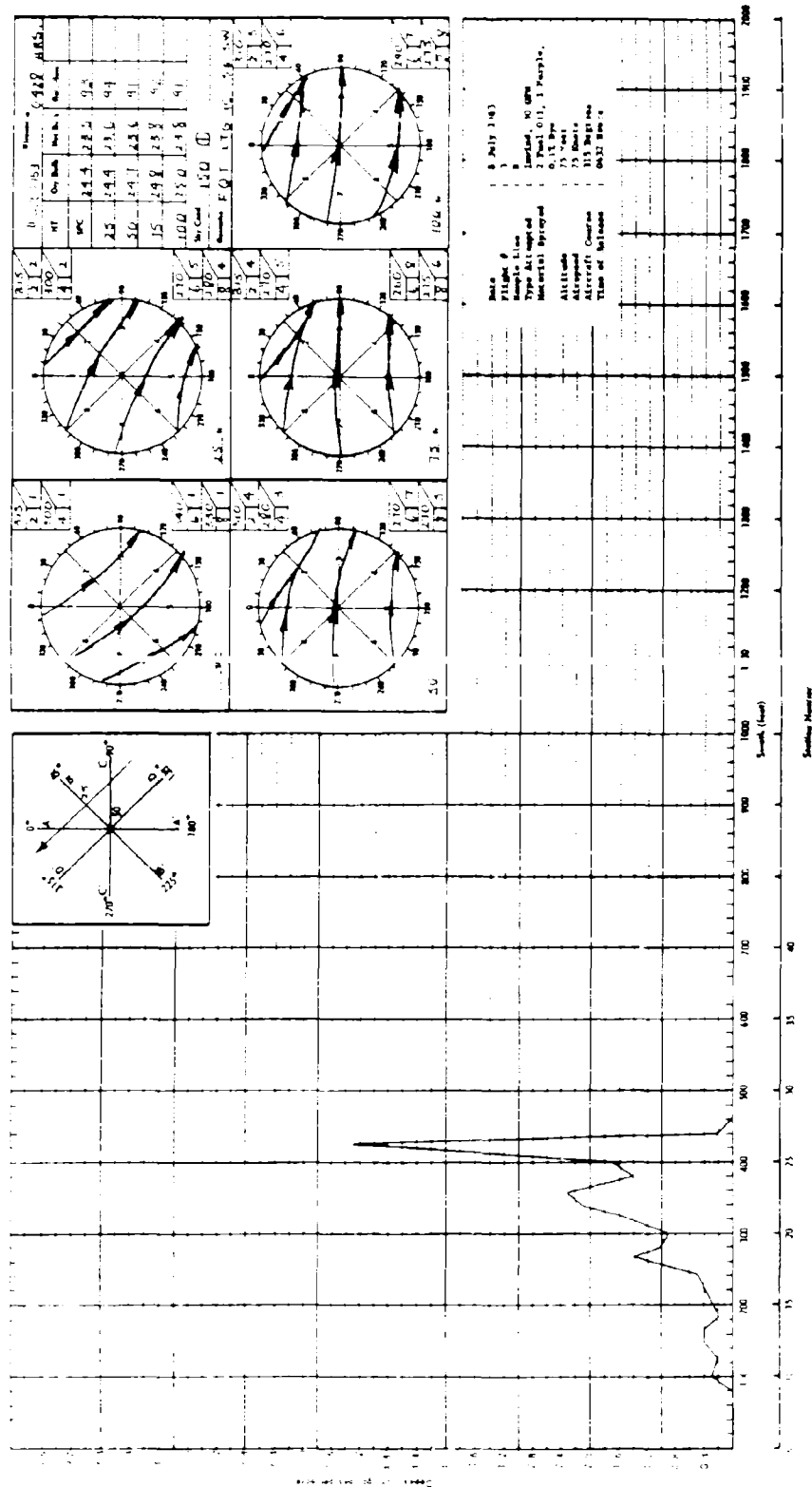
MATERIAL: 2 Fuel Oil, 1 Purple. FLOW RATE: 80 GPM
 DATE: 8 July 1963 SYSTEM: FIDAL
 FLIGHT #: 3 AIRSPEED: 75 Knots
 SAMPLE LINE: B ALTITUDE: 75 Feet
 TIME OF RELEASE: 0432 Hours AIRCRAFT COURSE: 315 Degrees
 DURATION: 13 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 9 Blank

| | |
|----|-----|
| 10 | 0.3 |
| 11 | 0.2 |
| 12 | 0.4 |
| 13 | 0.4 |
| 14 | 0.2 |
| 15 | 0.3 |
| 16 | 0.4 |
| 17 | 0.5 |
| 18 | 1.4 |
| 19 | 1.0 |
| 20 | 0.9 |
| 21 | 1.5 |
| 22 | 2.1 |
| 23 | 2.3 |
| 24 | 1.4 |
| 25 | 1.7 |
| 26 | 5.3 |
| 27 | 0.2 |

Stations 28 - 100 Blank

Total 28.3



MASS DEPOSIT

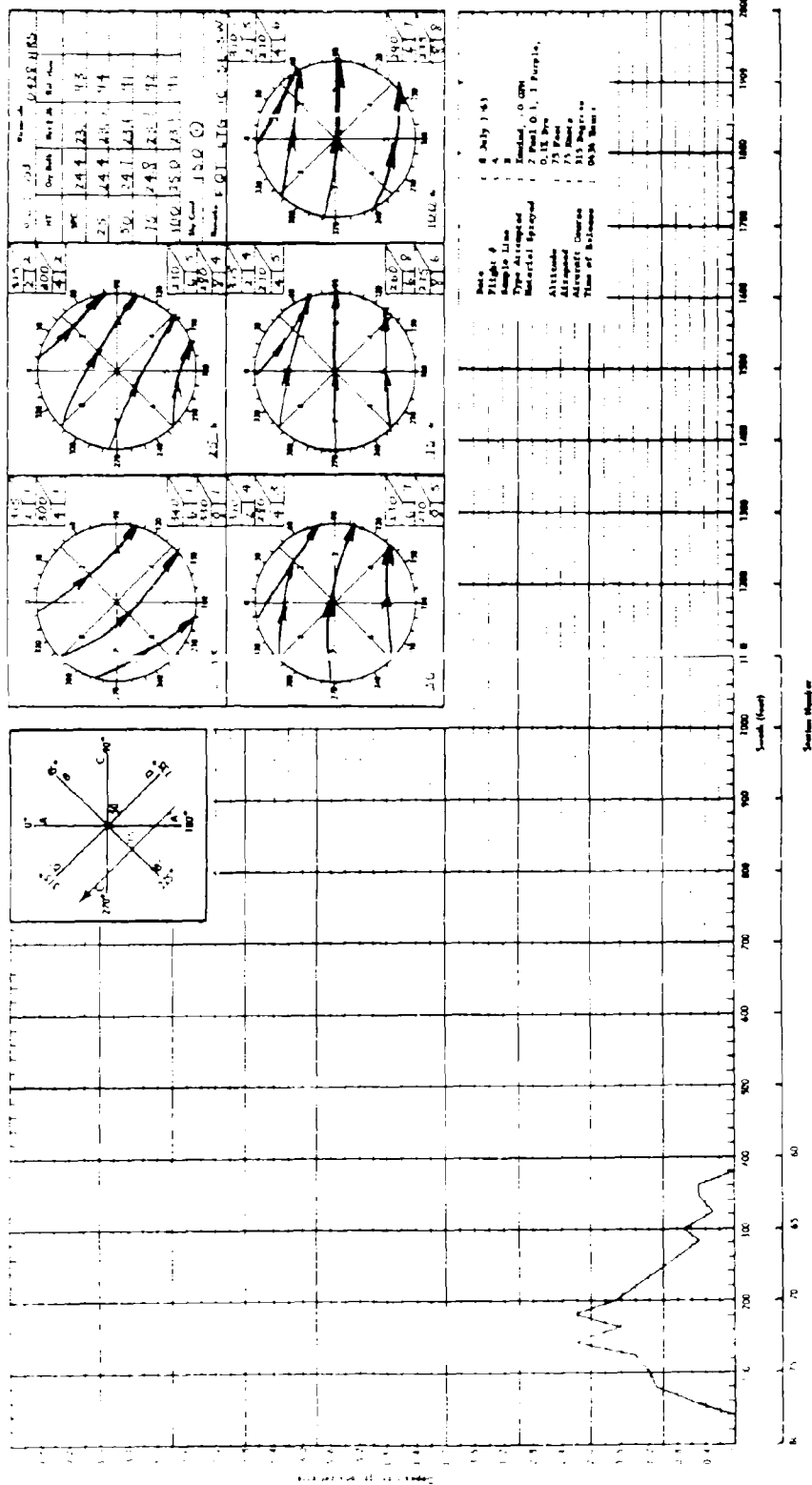
MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 8 July 1963 SYSTEM: HIDAL
 FLIGHT #: 4 AIRSPEED: 75 Knot
 SAMPLE LINE: B ALTITUDE: 75 Feet
 TIME OF RELEASE: 0434 Hours AIRCRAFT COURSE: 315 Degrees
 DURATION: 11 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 61 Blank

62 0.5
 63 0.5
 64 0.3
 65 0.7
 66 0.5
 67 0.8
 68 1.0
 69 1.4
 70 1.7
 71 2.2
 72 1.6
 73 2.2
 74 1.4
 75 1.2
 76 1.1
 77 0.5

Stations 78 - 100 Blank

Total 17.6



MASS DEPOSIT

| | |
|--|--|
| MATERIAL: <u>2 Fuel Oil, 1 Purple</u> | FLOW RATE: <u>80</u> <u>GPM</u> |
| DATE: <u>8 July 1963</u> | SYSTEM: <u>HIDAL</u> |
| FLIGHT #: <u>5</u> | AIRSPED: <u>75</u> <u>Knots</u> |
| SAMPLE LINE: <u>A</u> | ALTITUDE: <u>50</u> <u>Feet</u> |
| TIME OF RELEASE: <u>0455</u> <u>Hour</u> | AIRCRAFT COURSE: <u>270</u> <u>Degrees</u> |
| DURATION: <u>12</u> <u>Sec.</u> | |

| | | | |
|------------------------------|-----------------------|-----------------------|-----------------------|
| <u>STATION G.P.A.</u> | <u>STATION G.P.A.</u> | <u>STATION G.P.A.</u> | <u>STATION G.P.A.</u> |
| <u>Stations 1 - 63 Blank</u> | | | |

| | |
|-------------------------|-----|
| 64 | 0.2 |
| 65 | 0.8 |
| 66 | 1.9 |
| 67 | 1.0 |
| 68 | 0.7 |
| 69 | 0.7 |
| 70 | 1.8 |
| 71 | 1.7 |
| 72 | 1.7 |
| 73 | 1.1 |
| 74 | 1.0 |
| 75 | 0.7 |
| 76 | 0.2 |
| 77 | 0.5 |
| 78 | 0.2 |
| Stations 79 - 100 Blank | |

Total 14.2

MASS MEDIAN DIAMETER

DATE: 8 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 6 PAPER: Kromakote, white
 SAMPLE LINE: A MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 80 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 22 | 1 | 2900* | | | |
| 22 | 3 | 2800 | | | |
| 22 | 2 | 2700 | | | |
| 23 | 4 | 2600 | | | |
| 22 | 6 | 2500 | 22 | 1A | 100(smallest) |
| 24 | 5 | 2400 | | | |
| 21 | 8 | 2300 | | | |
| 21 | 7 | 2200 | | | |
| 22 | 10 | 2100 | | | |
| 22 | 9 | 2000 | | | |

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{2900}{6.355 \times 2.2} = 217.9 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(2900)}{6.430} = \frac{2900}{6.430} = 479.5 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 8 July 1963 SYSTEM: HIDAL
 FLIGHT #: 6 AIRSPEED: 75 Knots
 SAMPLE LINE: A ALTITUDE: 50 Feet
 TIME OF RELEASE: 0457 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 13 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 14 Blank

15 0.4
 16 0.4
 17 0.5
 18 0.7
 19 1.0
 20 1.6
 21 2.0
 22 0.7
 23 0.9
 24 0.9
 25 0.7
 26 1.9
 27 3.1
 28 0.1
 Stations 29 - 100 Blank

Total 14.8

MASS DEPOSIT

| | |
|---|--|
| MATERIAL: <u>2 Fuel Oil, 1 Purple</u> | FLOW RATE: <u>80</u> <u>GPM</u> |
| DATE: <u>8 July 1963</u> | SYSTEM: <u>HIDAL</u> |
| FLIGHT #: <u>7</u> | AIRSPED: <u>75</u> <u>Knots</u> |
| SAMPLE LINE: <u>A</u> | ALTITUDE: <u>75</u> <u>Feet</u> |
| TIME OF RELEASE: <u>0515</u> <u>Hours</u> | AIRCRAFT COURSE: <u>270</u> <u>Degrees</u> |
| DURATION: <u>12</u> <u>Sec.</u> | |

| | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|
| <u>STATION G.P.A.</u> | <u>STATION G.P.A.</u> | <u>STATION G.P.A.</u> | <u>STATION G.P.A.</u> |
| Stations 1 - 9 Blank | | | |

| | |
|----|-----|
| 10 | 0.0 |
| 11 | 0.1 |
| 12 | 0.1 |
| 13 | 0.2 |
| 14 | 0.2 |
| 15 | 0.2 |
| 16 | 0.7 |
| 17 | 0.4 |
| 18 | 0.5 |
| 19 | 1.0 |
| 20 | 0.7 |
| 21 | 0.7 |
| 22 | 0.8 |
| 23 | 0.8 |
| 24 | 1.2 |
| 25 | 0.9 |
| 26 | 2.3 |
| 27 | 0.0 |

Stations 28 - 100 Blank

Total 10.8

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 8 July 1963 SYSTEM: HIDAL
 FLIGHT #: 8 AIRSPEED: 75 Knots
 SAMPLE LINE: A ALTITUDE: 75 Feet
 TIME OF RELEASE: 0517 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 15 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 61 Blank

62 0.1
 63 0.2
 64 0.2
 65 0.5
 66 0.7
 67 Missing
 68 0.7
 69 0.9
 70 1.2
 71 1.0
 72 0.9
 73 1.1
 74 0.9
 75 0.7
 76 2.6
 77 0.0

Stations 78 - 100 Blank

Total 11.7

MASS DEPOSIT

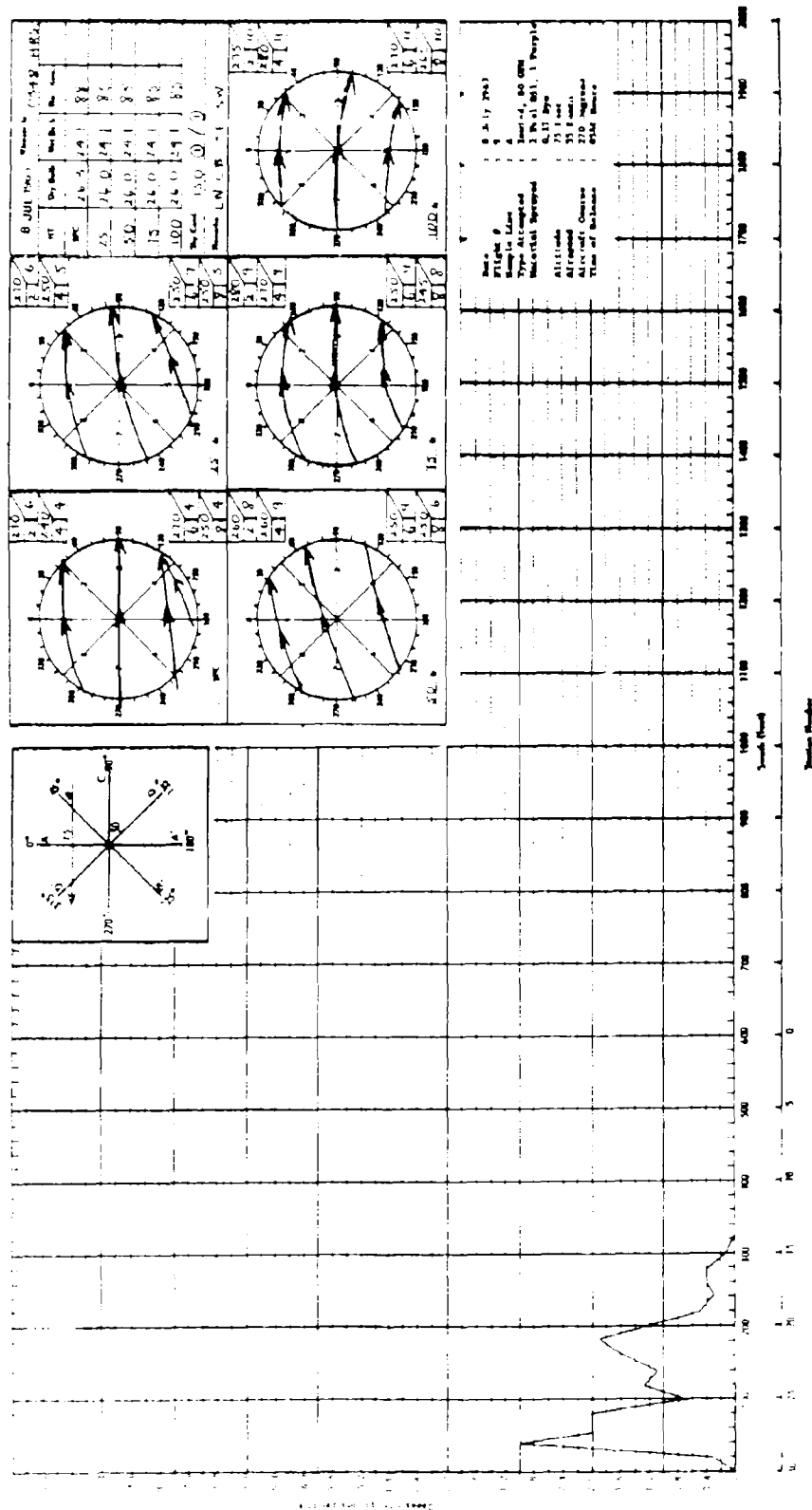
MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 8 July 1963 SYSTEM: HIDAL
 FLIGHT #: 9 AIRSPEED: 55 Knots
 SAMPLE LINE: A ALTITUDE: 75 Feet
 TIME OF RELEASE: .0548 Hour AIRCRAFT COURSE: 270 Degrees
 DURATION: 16 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 14 Blank

| | |
|----|-----|
| 15 | 0.1 |
| 16 | 0.4 |
| 17 | 0.4 |
| 18 | 0.3 |
| 19 | 0.5 |
| 20 | 1.2 |
| 21 | 1.9 |
| 22 | 1.6 |
| 23 | 1.1 |
| 24 | 1.3 |
| 25 | 0.7 |
| 26 | 1.6 |
| 27 | 1.6 |
| 28 | 3.0 |
| 29 | 0.3 |

Stations 30 - 100 Blank

Total 16.0



MASS MEDIAN DIAMETER

DATE: 8 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 10 PAPER: Kromakote, white
 SAMPLE LINE: A MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 80 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 77 | 4 | 3900* | | | |
| 76 | 2 | 3800 | | | |
| 77 | 3 | 3700 | | | |
| 73 | 1 | 3600 | | | |
| 77 | 5 | 3500 | 75 | 1A | 100(smallest) |
| 77 | 6 | 3400 | | | |
| 79 | 8 | 3300 | | | |
| 77 | 10 | 3200 | | | |
| 71 | 9 | 3100 | | | |
| 75 | 7 | 3000 | | | |

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{3900}{6.355 \times 2.2} = 282.4 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(3900)}{6.430} = \frac{3900}{6.430} = 621.4 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 8 July 1963 SYSTEM: HIDAL
 FLIGHT #: 10 AIRSPEED: 55 Knots
 SAMPLE LINE: A ALTITUDE: 75 Feet
 TIME OF RELEASE: 0550 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 14 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 64 Blank

65 0.3
 66 0.3
 67 0.4
 68 0.9
 69 0.9
 70 1.3
 71 1.5
 72 2.0
 73 2.0
 74 0.9
 75 1.1
 76 1.7
 77 1.5
 78 2.3
 79 1.2
 80 0.5

Stations 81 - 100 Blank

Total 18.8

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 83.0 GPM
 DATE: 8 July 1963 SYSTEM: HIDAL
 FLIGHT #: 11 AIRSPEED: 55 Knots
 SAMPLE LINE: A ALTITUDE: 75 Feet
 TIME OF RELEASE: 0606 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 19 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------|--------|---------|--------|---------|--------|
| Stations 1 - 15 | Blank | 16 | 0.1 | | | | |
| | | 17 | 0.4 | | | | |
| | | 18 | 0.6 | | | | |
| | | 19 | 2.2 | | | | |
| | | 20 | 1.3 | | | | |
| | | 21 | 1.9 | | | | |
| | | 22 | 2.2 | | | | |
| | | 23 | 2.0 | | | | |
| | | 24 | 2.3 | | | | |
| | | 25 | 1.5 | | | | |
| | | 26 | 1.3 | | | | |
| | | 27 | 1.6 | | | | |
| | | 28 | 6.3 | | | | |
| | | 29 | 0.3 | | | | |
| | | 30 | 0.4 | | | | |
| | | 31 | 0.3 | | | | |
| | | 32 | 0.2 | | | | |
| | | Stations 33 - 100 | Blank | | | | |

Total 24.9

MASS MEDIAN DIAMETER

DATE: 8 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 12 PAPER: Kromekote, white
 SAMPLE LINE: A MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 83 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|----------------|
| 77 | 2 | 7000 | | | |
| 73 | 1 | 6000* | | | |
| 73 | 7 | 5800 | | | |
| 73 | 3 | 5700 | | | |
| 73 | 4 | 5600 | 77 | 1A | 100 (smallest) |
| 73 | 8 | 5400 | | | |
| 73 | 6 | 5300 | | | |
| 73 | 5 | 5200 | | | |
| 73 | 9 | 5100 | | | |
| 73 | 10 | 5000 | | | |

$$MMD = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{6000}{6.355 \times 2.2} = 418.0 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(7000)}{6.430} = \frac{7000}{6.430} = 1061.7 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 83.0 GPM
 DATE: 8 July 1963 SYSTEM: HIDAL
 FLIGHT #: 12 AIRSPEED: 55 Knot
 SAMPLE LINE: A ALTITUDE: 75 Feet
 TIME OF RELEASE: 0608 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 14 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|---------|--------|-------------------|--------|---------|--------|
| Stations 1 - 72 | Blank | | | 73 | 1.5 | | |
| | | | | 74 | 3.2 | | |
| | | | | 75 | 2.7 | | |
| | | | | 76 | 2.1 | | |
| | | | | 77 | 1.5 | | |
| | | | | 78 | 2.0 | | |
| | | | | 79 | 3.9 | | |
| | | | | 80 | 1.1 | | |
| | | | | 81 | 0.9 | | |
| | | | | 82 | 0.6 | | |
| | | | | 83 | 0.3 | | |
| | | | | 84 | 0.5 | | |
| | | | | 85 | 0.4 | | |
| | | | | 86 | 0.6 | | |
| | | | | 87 | 0.5 | | |
| | | | | 38 | 0.3 | | |
| | | | | Stations 89 - 100 | | | |
| | | | | Blank | | | |

Total 22.1

MASS MEDIAN DIAMETER

DATE: 8 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 13 PAPER: Kromekote, white
 SAMPLE LINE: A MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 83 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 79 | 1 | 4100* | | | |
| 76 | 2 | 4000 | | | |
| 81 | 4 | 3800 | | | |
| 77 | 5 | 3700 | | | |
| 76 | 11 | 3500 | 83 | 1A | 100(smallest) |
| 76 | 6 | 3400 | | | |
| 76 | 9 | 3300 | | | |
| 76 | 3 | 3200 | | | |
| 76 | 7 | 3100 | | | |
| 81 | 8 | 3000 | | | |
| 76 | 10 | 2900 | | | |

$$MMD = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{4100}{6.355 \times 2.2} = 295.3 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(4100)}{6.430} = \frac{4100}{6.430} = 649.8 \text{ Microns}$$

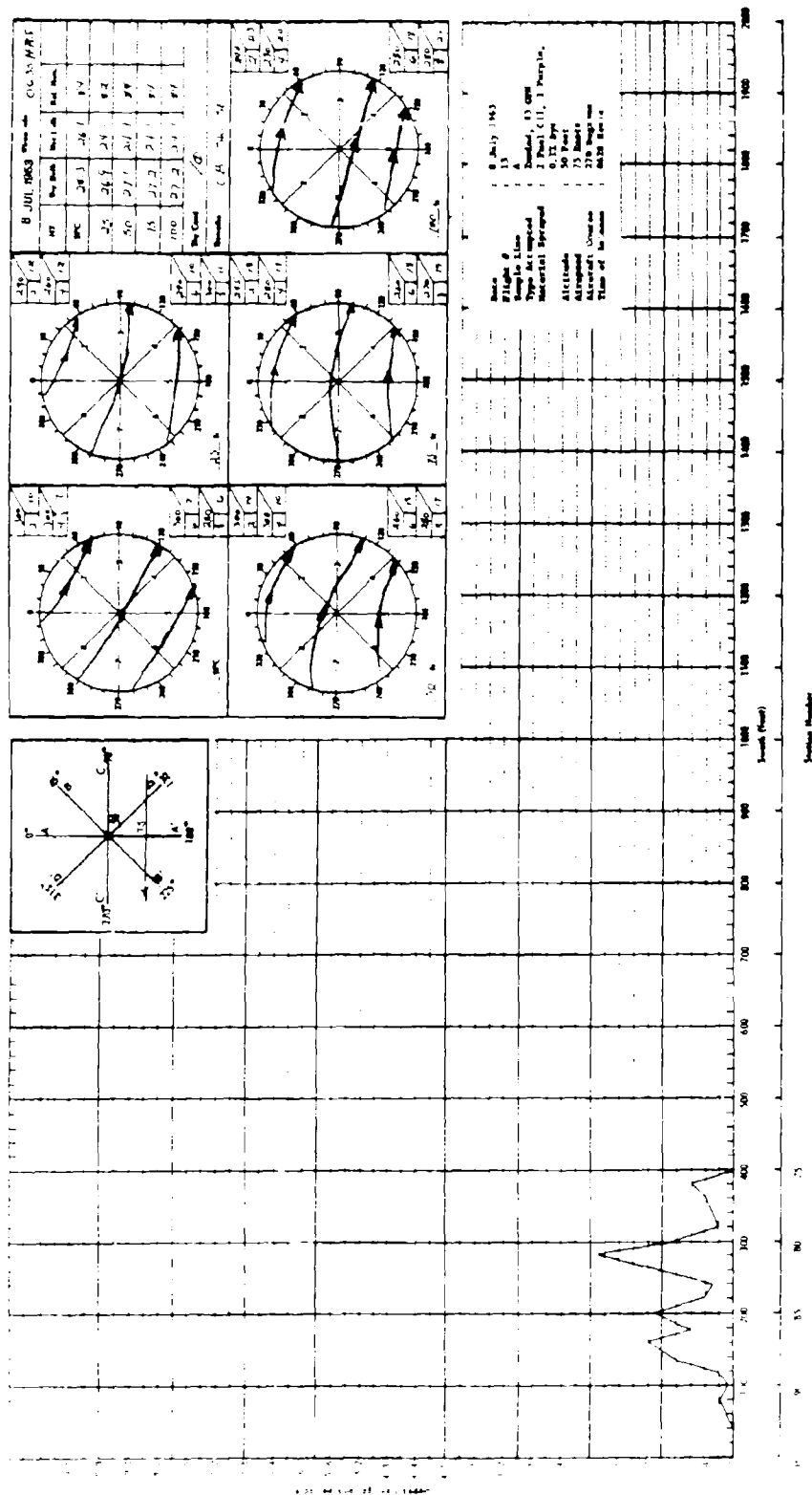
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 83.0 GPM
 DATE: 8 July 1963 SYSTEM: HIDAL
 FLIGHT #: 13 AIRSPEED: 75 Knots
 SAMPLE LINE: A ALTITUDE: 50 Feet
 TIME OF RELEASE: 0628 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 11 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|---------|--------|---------|--------|-------------------|--------|
| Stations 1 - 75 | Blank | | | | | 76 | 0.6 |
| | | | | | | 77 | 0.4 |
| | | | | | | 78 | 0.3 |
| | | | | | | 79 | 0.2 |
| | | | | | | 80 | 0.9 |
| | | | | | | 81 | 1.9 |
| | | | | | | 82 | 1.2 |
| | | | | | | 83 | 0.3 |
| | | | | | | 84 | 0.4 |
| | | | | | | 85 | 1.1 |
| | | | | | | 86 | 0.6 |
| | | | | | | 87 | 1.2 |
| | | | | | | 88 | 0.8 |
| | | | | | | 89 | 0.2 |
| | | | | | | 90 | 0.1 |
| | | | | | | 91 | 0.2 |
| | | | | | | 92 | 0.1 |
| | | | | | | 93 | 0.0 |
| | | | | | | Stations 94 - 100 | |
| | | | | | | Blank | |

Total 10.5

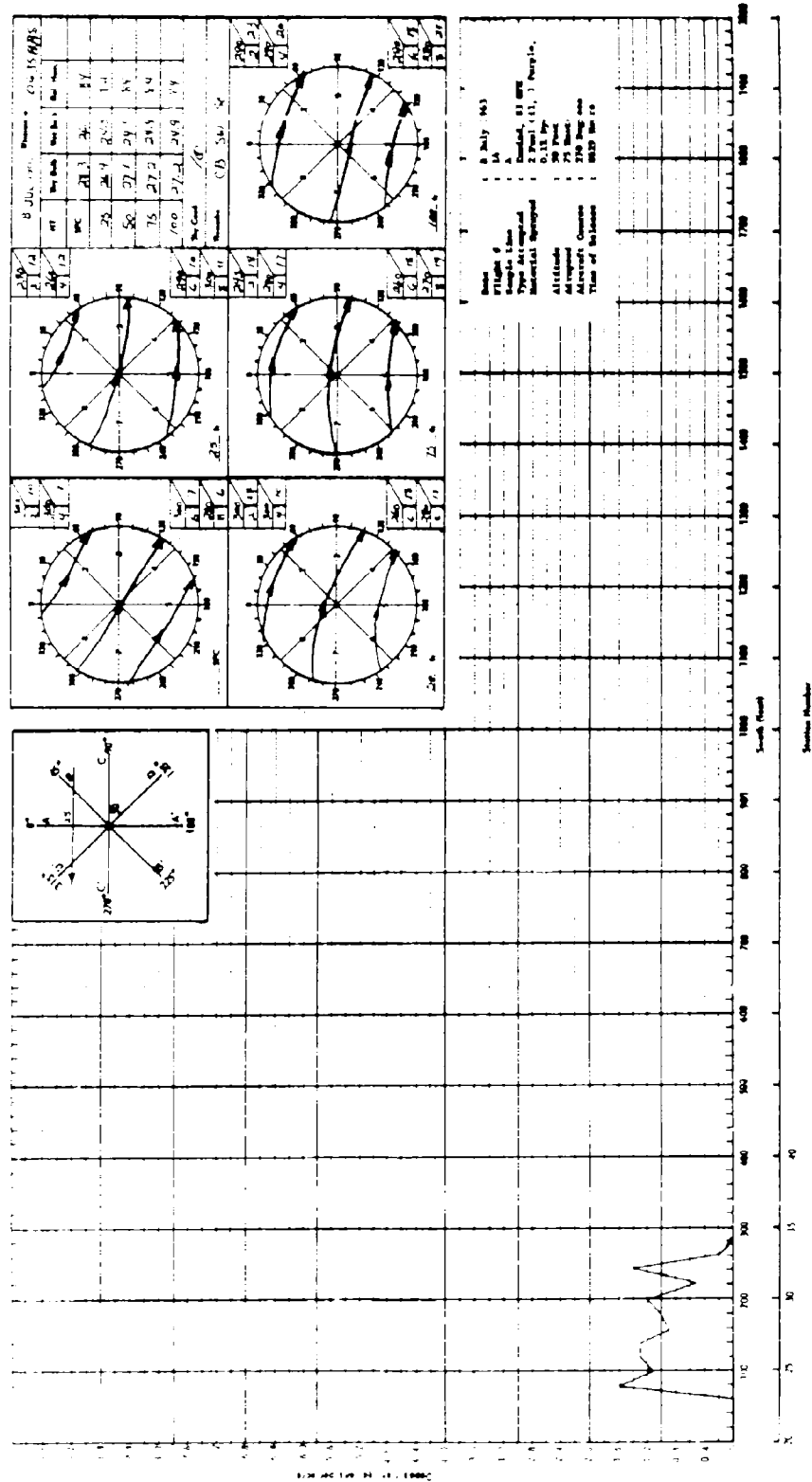


MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 83.0 GPM
 DATE: 8 July 1963 SYSTEM: HIDAL
 FLIGHT #: 14 ALTITUDE: 50 Feet
 SAMPLE LINE: A AIRSPEED: 75 Knots
 TIME OF RELEASE: 0629 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: _____

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------------|--------|---------|--------|---------|--------|
| Stations 1 - 22 | Blank | 23 | 0.0 | | | | |
| | | 24 | 1.6 | | | | |
| | | 25 | 1.1 | | | | |
| | | 26 | 1.3 | | | | |
| | | 27 | 1.3 | | | | |
| | | 28 | 0.9 | | | | |
| | | 29 | 1.0 | | | | |
| | | 30 | 1.2 | | | | |
| | | 31 | 0.5 | | | | |
| | | 32 | 1.4 | | | | |
| | | 33 | 0.2 | | | | |
| | | 34 | 0.0 | | | | |
| | | Stations 35 - 100 Blank | | | | | |

Total 10.5



H-34/MEDAL GROUND TEST & FLIGHT DATA

| | |
|--|--------------------------------------|
| DATE CALIBRATED: <u>7 July 1963</u> | DATE TEST FLOWN: <u>12 July 1963</u> |
| LIQUID SPRAYED: <u>Purple</u> | TOTAL NOZZLES OPEN: <u>60</u> |
| NOZZLE TYPE: <u>8015</u> | LIQUID TEMP: <u>36° C</u> |
| DURATION OF SPRAY: <u>30</u> Sec. | PUMP PRESSURE: <u>40</u> PSI |
| TOTAL AMOUNT SPRAYED: <u>34.0</u> Gal. | FLOW RATE CALIBRATED: <u>68</u> GPM |

OPERATIONAL DATA DURING FLIGHT

Above information is for Runs 1 - 8.

| | |
|--|--------------------------------------|
| DATE CALIBRATED: <u>7 July 1963</u> | DATE TEST FLOWN: <u>12 July 1963</u> |
| LIQUID SPRAYED: <u>Purple</u> | TOTAL NOZZLES OPEN: <u>60</u> |
| NOZZLE TYPE: <u>Check Valves</u> | LIQUID TEMP: <u>38.5° C</u> |
| DURATION OF SPRAY: <u>30</u> Sec. | PUMP PRESSURE: <u>23.5</u> PSI |
| TOTAL AMOUNT SPRAYED: <u>34.5</u> Gal. | FLOW RATE CALIBRATED: <u>69</u> GPM |

OPERATIONAL DATA DURING FLIGHT

Above information is for Runs 9 - 14.

MASS MEDIAN DIAMETER

DATE: 12 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 1 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: Purple
 FLOW RATE: 68 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 79 | 2 | 4400* | | | |
| 76 | 6 | 4300 | | | |
| 76 | 5 | 4200 | | | |
| 79 | 1 | 4100 | | | |
| 79 | 3 | 4000 | 88 | 1A | 100(smallest) |
| 79 | 4 | 3900 | | | |
| 76 | 8 | 3800 | | | |
| 77 | 7 | 3700 | | | |
| 80 | 11 | 3600 | | | |
| 80 | 9 | 3500 | | | |

$$\text{MMD} = \frac{70.44 + 0.1431(\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(4400)}{2.2} = 318.2 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431 \text{ Max Spot} = 70.44 + 0.1431(4400) = 700.1 \text{ Microns}$$

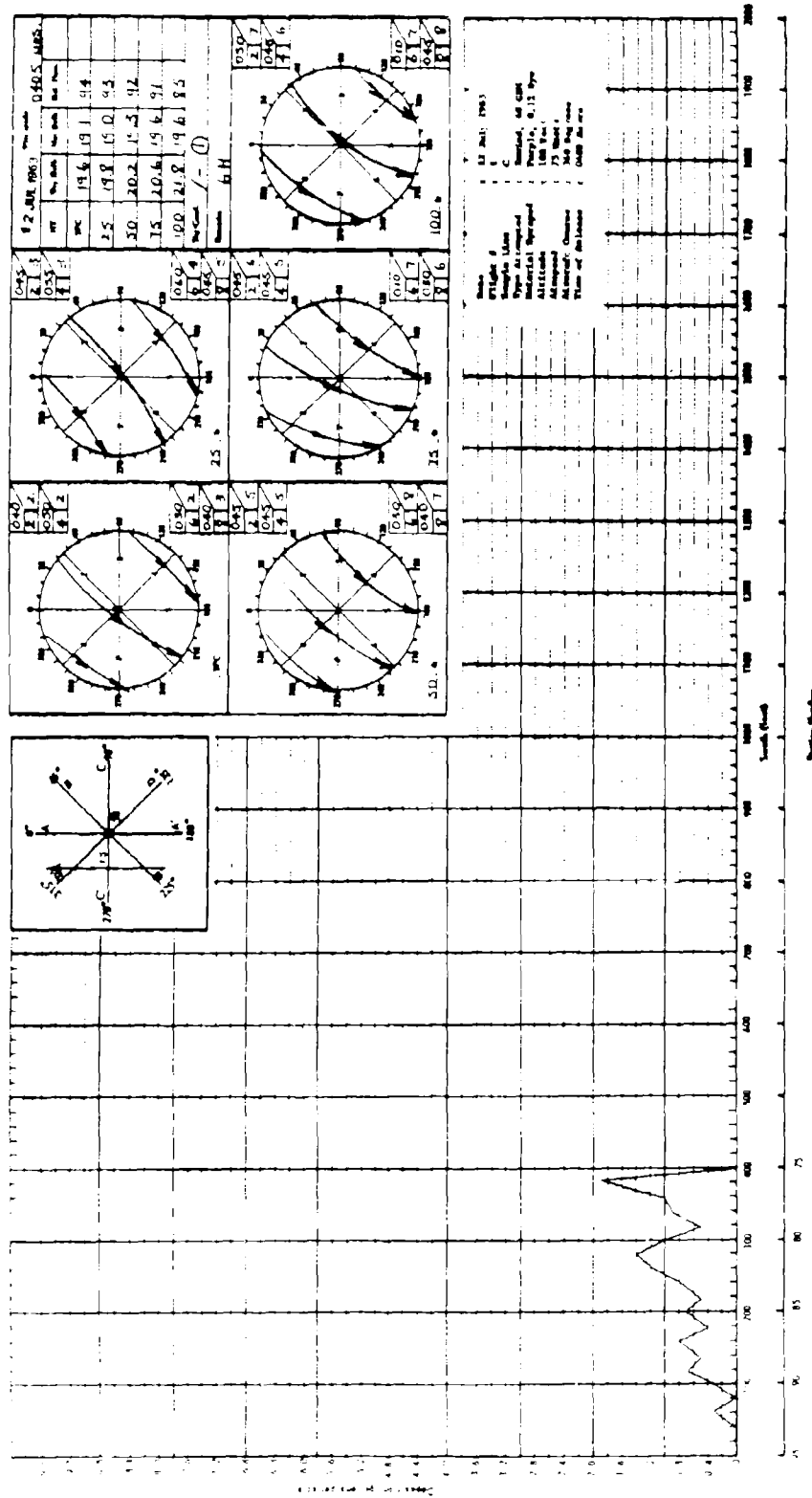
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 68 GPM
 DATE: 12 July 1963 SYSTEM: HIDAL
 FLIGHT #: 1 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 100 Feet
 TIME OF RELEASE: 0409 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 10 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|---------|--------|---------|--------|-------------------|--------|
| Stations 1 - 75 | Blank | | | | | 76 | 1.9 |
| | | | | | | 77 | 1.0 |
| | | | | | | 78 | 0.9 |
| | | | | | | 79 | 0.5 |
| | | | | | | 80 | 1.0 |
| | | | | | | 81 | 1.4 |
| | | | | | | 82 | 1.2 |
| | | | | | | 83 | 0.8 |
| | | | | | | 84 | 0.5 |
| | | | | | | 85 | 0.7 |
| | | | | | | 86 | 0.4 |
| | | | | | | 87 | 0.8 |
| | | | | | | 88 | 0.5 |
| | | | | | | 89 | 0.7 |
| | | | | | | 90 | 0.3 |
| | | | | | | 91 | 0.0 |
| | | | | | | 92 | 0.3 |
| | | | | | | 93 | 0.0 |
| | | | | | | Stations 94 - 100 | |
| | | | | | | Blank | |

Total 12.9

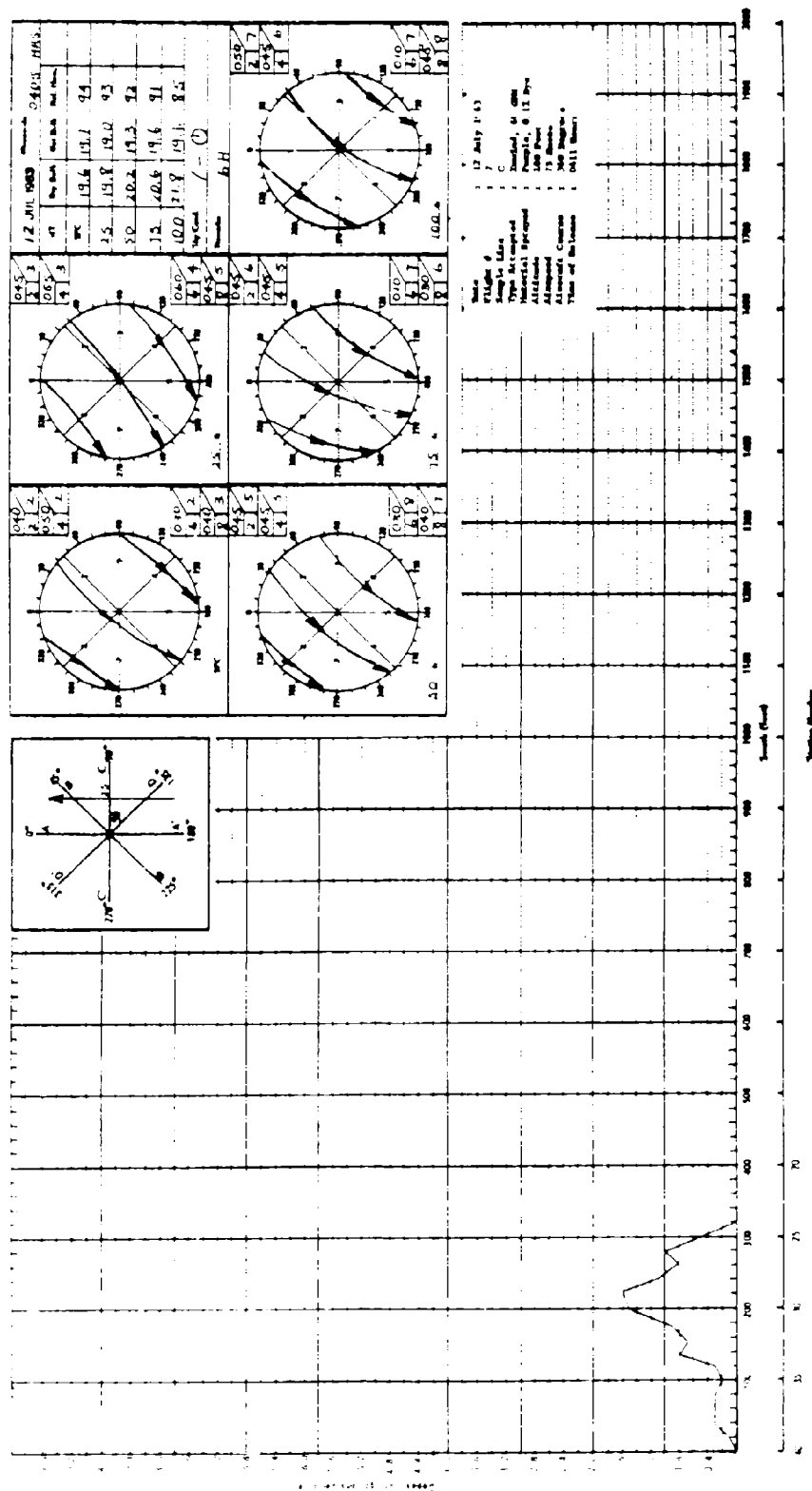


MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 68 GPM
 DATE: 12 July 1963 SYSTEM: HIDAL
 FLIGHT #: 2 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 100 Feet
 TIME OF RELEASE: 0411 Hours AIRCRAFT COURSE: 360 Degree
 DURATION: 10 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------|--------|---------|--------|---------|--------|
| Stations 1 - 24 | Blank | 25 | 0.5 | | | | |
| | | 26 | 1.0 | | | | |
| | | 27 | 0.8 | | | | |
| | | 28 | 1.1 | | | | |
| | | 29 | 1.6 | | | | |
| | | 30 | 1.5 | | | | |
| | | 31 | 0.9 | | | | |
| | | 32 | 0.7 | | | | |
| | | 33 | 0.8 | | | | |
| | | 34 | 0.3 | | | | |
| | | 35 | 0.2 | | | | |
| | | 36 | 0.3 | | | | |
| | | 37 | 0.3 | | | | |
| | | 38 | 0.3 | | | | |
| | | 39 | 0.1 | | | | |
| | | 40 | 0.0 | | | | |
| | | Stations 41 - 100 | Blank | | | | |

Total 10.4



MASS DEPOSIT

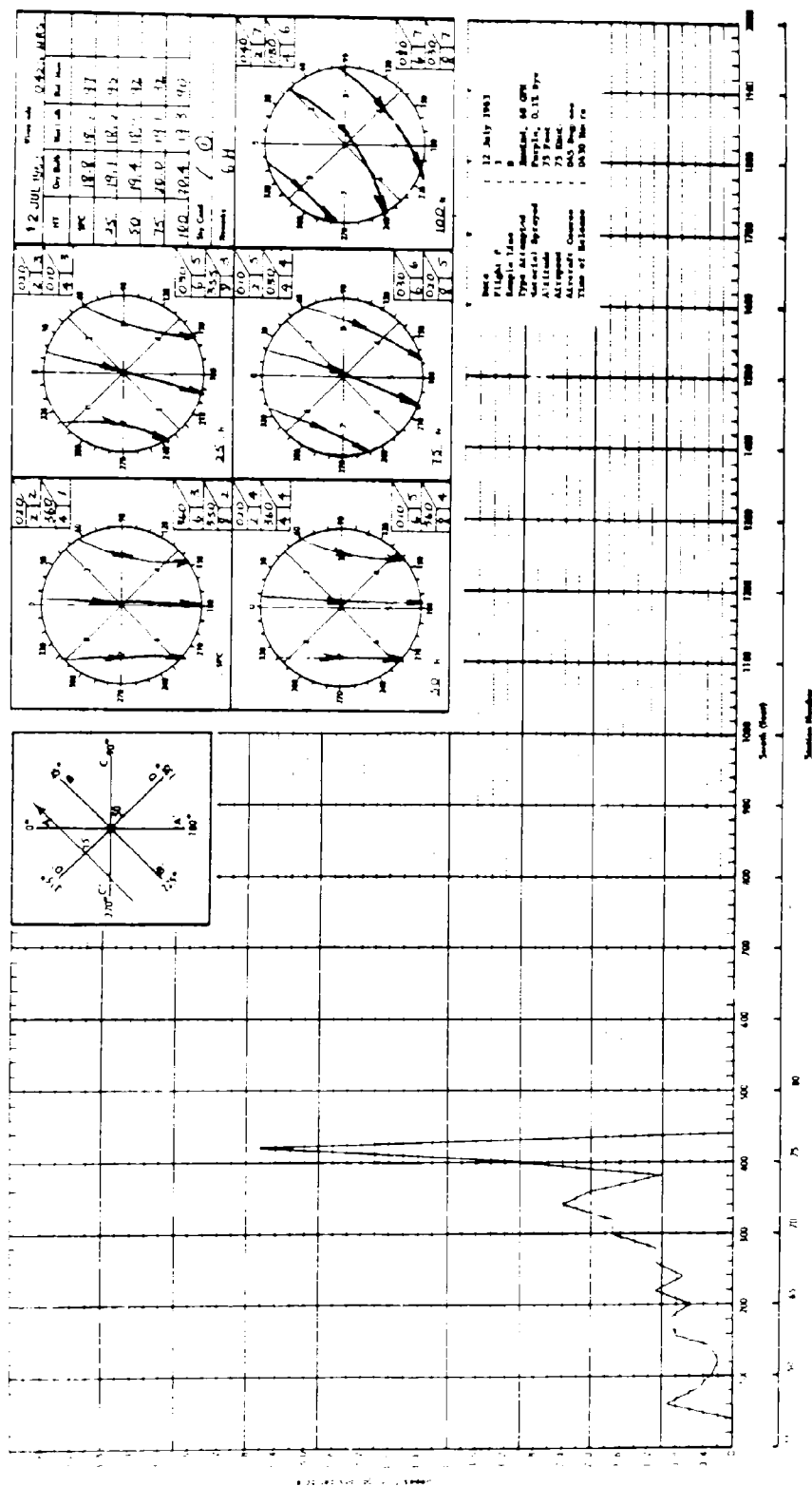
MATERIAL: Purple FLOW RATE: 68 GPM
 DATE: 12 July 1963 SYSTEM: HIDAL
 FLIGHT #: 3 AIRSPEED: 75 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0430 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 13 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 57 Blank

| | |
|----|-----|
| 58 | 0.9 |
| 59 | 0.5 |
| 60 | 0.3 |
| 61 | 0.2 |
| 62 | 0.3 |
| 63 | 0.8 |
| 64 | 0.9 |
| 65 | 0.6 |
| 66 | 1.1 |
| 67 | 0.7 |
| 68 | 1.1 |
| 69 | 1.1 |
| 70 | 1.7 |
| 71 | 1.7 |
| 72 | 2.4 |
| 73 | 2.0 |
| 74 | 1.0 |
| 75 | 3.0 |
| 76 | 6.6 |

Stations 77 - 100 Blank

Total 26.9



MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 68 GPM
 DATE: 12 July 1963 SYSTEM: HIDAL
 FLIGHT #: 4 AIRSPEED: 75 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0432 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 11 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 10 Blank

| | |
|----|-----|
| 10 | 0.2 |
| 12 | 1.4 |
| 13 | 0.1 |
| 14 | 0.9 |
| 15 | 0.5 |
| 16 | 0.9 |
| 17 | 1.7 |
| 18 | 1.4 |
| 19 | 1.7 |
| 20 | 1.4 |
| 21 | 2.1 |
| 22 | 1.5 |
| 23 | 0.6 |
| 24 | 2.1 |
| 25 | 3.6 |

Stations 26 - 100 Blank

Total 20.1

MASS MEDIAN DIAMETER

DATE: 12 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 5 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: Purple
 FLOW RATE: 68 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 74 | 1 | 6400 | | | |
| 74 | 2 | 6100 | | | |
| 73 | 4 | 6000 | | | |
| 73 | 3 | 5900 | | | |
| 76 | 6 | 5300* | | | |
| 74 | 5 | 5200 | | | |
| 73 | 10 | 5000 | 67 | 1A | 100(smallest) |
| 71 | 9 | 4900 | | | |
| 74 | 7 | 4800 | | | |
| 74 | 8 | 4100 | | | |
| 73 | 11 | 4600 | | | |
| 74 | 12 | 4500 | | | |
| 76 | 13 | 4400 | | | |

$$\text{MMD} = \frac{70.44 + 0.1431 \text{ Spot D Max}}{\text{Con. Factor}} = \frac{70.44 + 0.1431(5300)}{2.2} = 378.6 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431 \text{ Max Spot} = 70.44 + 0.1431(6400) = 986.3 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

| | |
|---|--|
| MATERIAL: <u>Purple</u> | FLOW RATE: <u>68</u> <u>GPM</u> |
| DATE: <u>12 July 1963</u> | SYSTEM: <u>RIDAL</u> |
| FLIGHT #: <u>5</u> | AIRSPED: <u>35</u> <u>Knots</u> |
| SAMPLE LINE: <u>C</u> | ALTITUDE: <u>75</u> <u>Feet</u> |
| TIME OF RELEASE: <u>0452</u> <u>Hours</u> | AIRCRAFT COURSE: <u>360</u> <u>Degrees</u> |
| DURATION: <u>16</u> <u>Sec.</u> | |

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|---------|--------|-------------------|--------|---------|--------|
| Stations 1 - 66 | Blank | | | 67 | 0.5 | | |
| | | | | 68 | 1.0 | | |
| | | | | 69 | 1.2 | | |
| | | | | 70 | 1.3 | | |
| | | | | 71 | 2.7 | | |
| | | | | 72 | 3.5 | | |
| | | | | 73 | 2.5 | | |
| | | | | 74 | 2.7 | | |
| | | | | 75 | 1.4 | | |
| | | | | 76 | 1.2 | | |
| | | | | 77 | 2.7 | | |
| | | | | 78 | 3.7 | | |
| | | | | 79 | 2.2 | | |
| | | | | 80 | 1.1 | | |
| | | | | 81 | 0.9 | | |
| | | | | 82 | 0.8 | | |
| | | | | 83 | 0.9 | | |
| | | | | Stations 84 - 100 | Blank | | |

% Recovery - 113.9

Total 30.3

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 68 GPM
 DATE: 12 July 1963 SYSTEM: HIDAL
 FLIGHT #: 6 AIRSPEED: 55 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0452 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 15 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 19 Blank

20 0.9
 21 0.7
 22 5.9
 23 3.7
 24 2.8
 25 1.3
 26 3.0
 27 3.7
 28 1.7
 29 1.7
 30 1.5
 31 1.0
 32 0.7
 33 1.0

Stations 34 - 100 Blank

% Recovery - 112.2

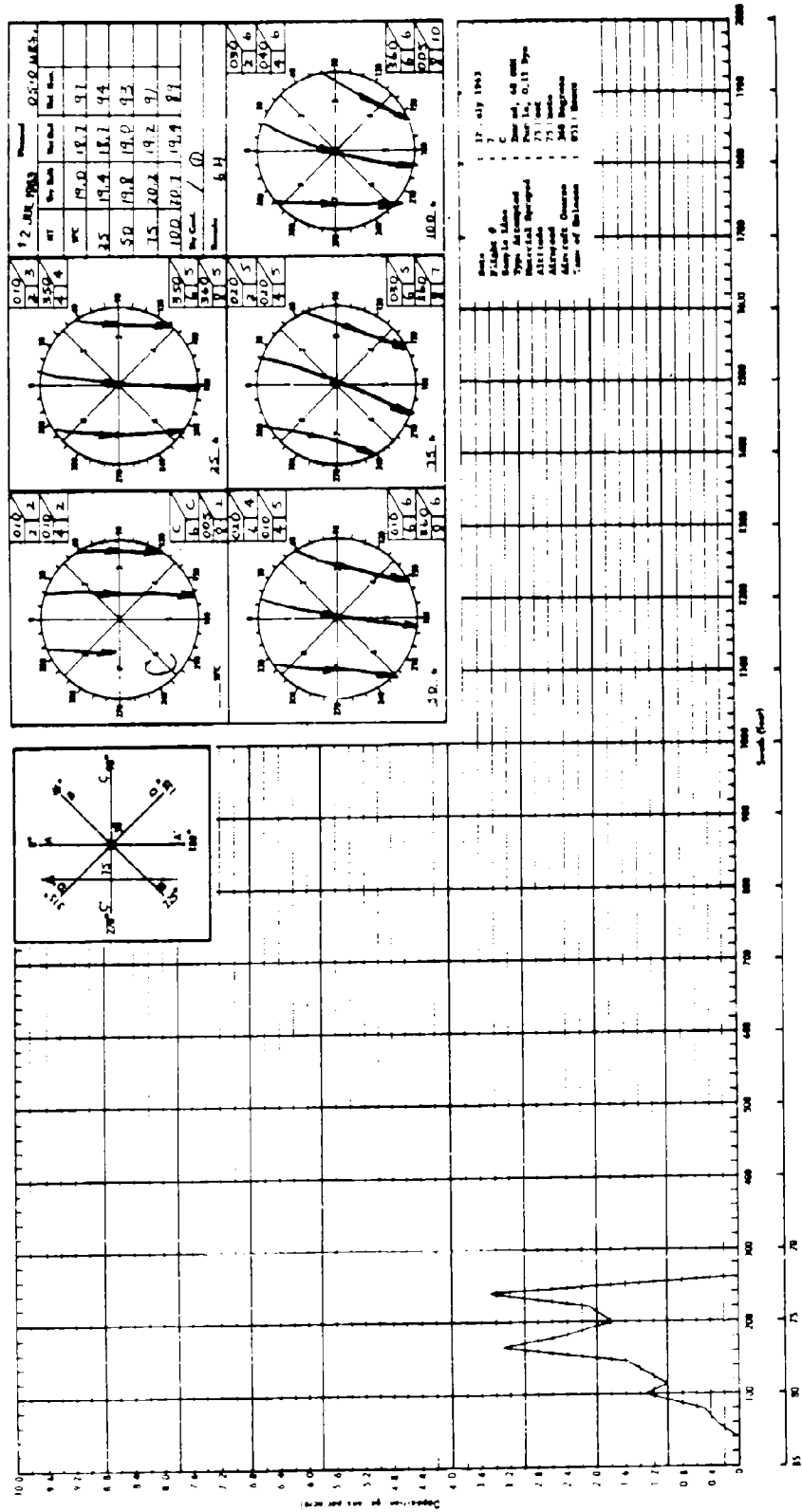
Total 29.6

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 68 GPM
 DATE: 12 July 1963 SYSTEM: HIDAL
 FLIGHT #: 7 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0510 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 12 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|---------|--------|---------|--------|-------------------|--------|---------|--------|
| | | | | 73 | 3.5 | | |
| | | | | 72 | 2.1 | | |
| | | | | 75 | 1.8 | | |
| | | | | 76 | 2.5 | | |
| | | | | 77 | 3.3 | | |
| | | | | 78 | 1.6 | | |
| | | | | 79 | 1.0 | | |
| | | | | 80 | 1.3 | | |
| | | | | 81 | 0.5 | | |
| | | | | 82 | 0.3 | | |
| | | | | Stations 83 - 100 | | | |
| | | | | | | Blank | |

Total 17.9



MASS MEDIAN DIAMETER

DATE: 12 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 8 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: Purple
 FLOW RATE: 68 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 28 | 2 | 4700 | | | |
| 28 | 1 | 4300* | | | |
| 27 | 7 | 4200 | | | |
| 27 | 6 | 4100 | | | |
| 28 | 3 | 4000 | 29 | 1A | 100(smallest) |
| 28 | 4 | 3900 | | | |
| 28 | 8 | 3700 | | | |
| 28 | 5 | 3600 | | | |
| 28 | 9 | 3400 | | | |
| 28 | 10 | 3300 | | | |

$$\text{MMD} = \frac{70.44 + 0.1431(\text{Max Spot})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(4300)}{2.2} = 311.7 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(4700) = 743.0 \text{ Microns}$$

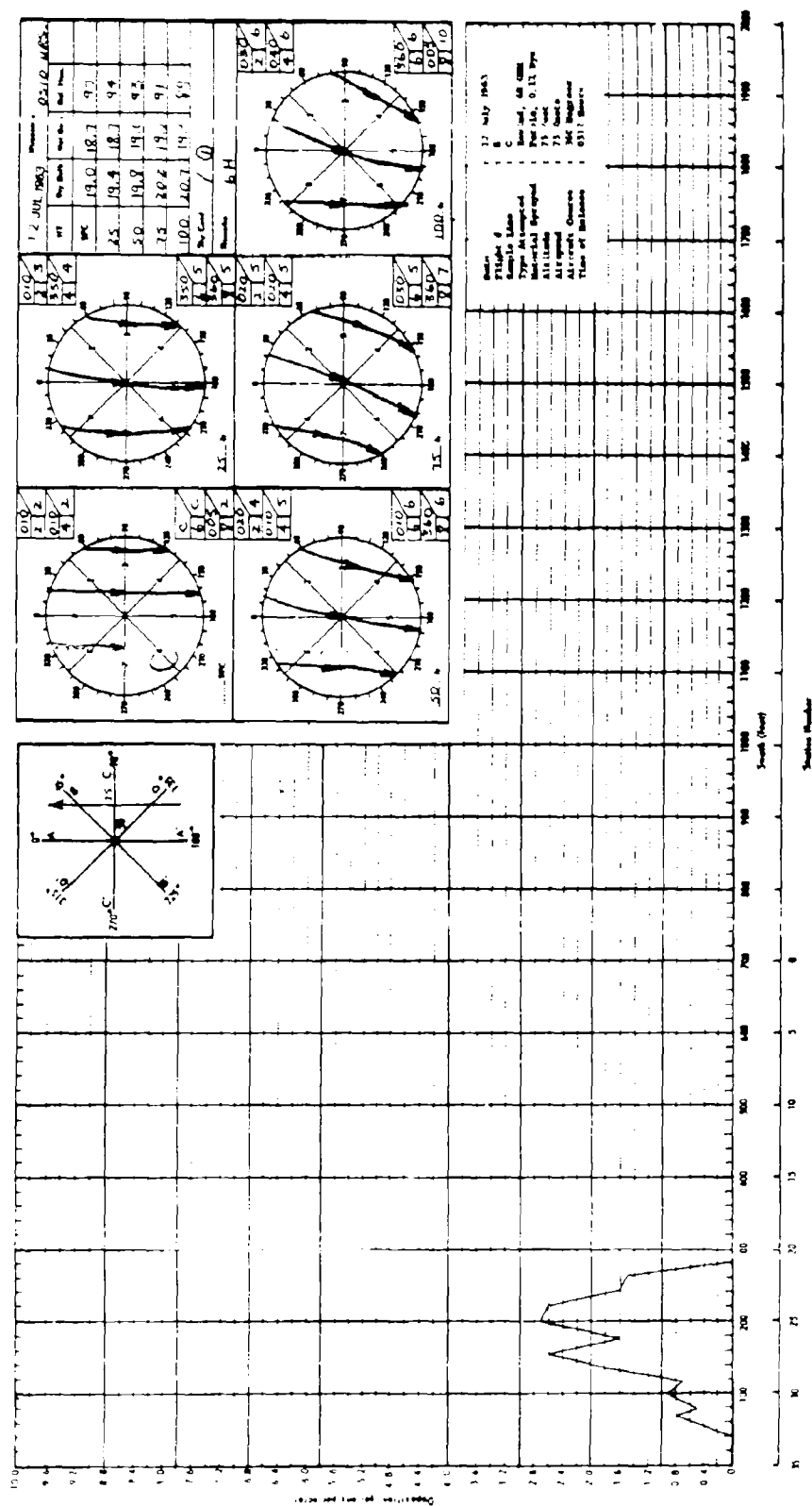
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 68 GPM
 DATE: 12 July 1963 SYSTEM: HIDAL
 FLIGHT #: 8 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0512 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 10 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------|--------|---------|--------|---------|--------|
| Stations 1 - 21 | Blank | 22 | 1.5 | | | | |
| | | 23 | 1.6 | | | | |
| | | 24 | 2.6 | | | | |
| | | 25 | 2.7 | | | | |
| | | 26 | 1.6 | | | | |
| | | 27 | 2.6 | | | | |
| | | 28 | 1.9 | | | | |
| | | 29 | 0.7 | | | | |
| | | 30 | 0.9 | | | | |
| | | 31 | 0.5 | | | | |
| | | 32 | 0.8 | | | | |
| | | Stations 33 - 100 | Blank | | | | |

Total 17.4



MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 12 July 1963 SYSTEM: HIDAL
 FLIGHT #: 9 AIRSPEED: 55 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0531 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 10 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|---------|--------|---------|--------|-------------------|--------|
| Stations 1 - 73 | Blank | | | | | 74 | 0.0 |
| | | | | | | 75 | 2.7 |
| | | | | | | 76 | 3.8 |
| | | | | | | 77 | 1.8 |
| | | | | | | 78 | 3.5 |
| | | | | | | 79 | 3.1 |
| | | | | | | 80 | 1.4 |
| | | | | | | 81 | 0.6 |
| | | | | | | 82 | 0.8 |
| | | | | | | 83 | 0.5 |
| | | | | | | 84 | 0.2 |
| | | | | | | 85 | 0.3 |
| | | | | | | 86 | 0.2 |
| | | | | | | 87 | 0.1 |
| | | | | | | Stations 88 - 100 | |
| | | | | | | Blank | |

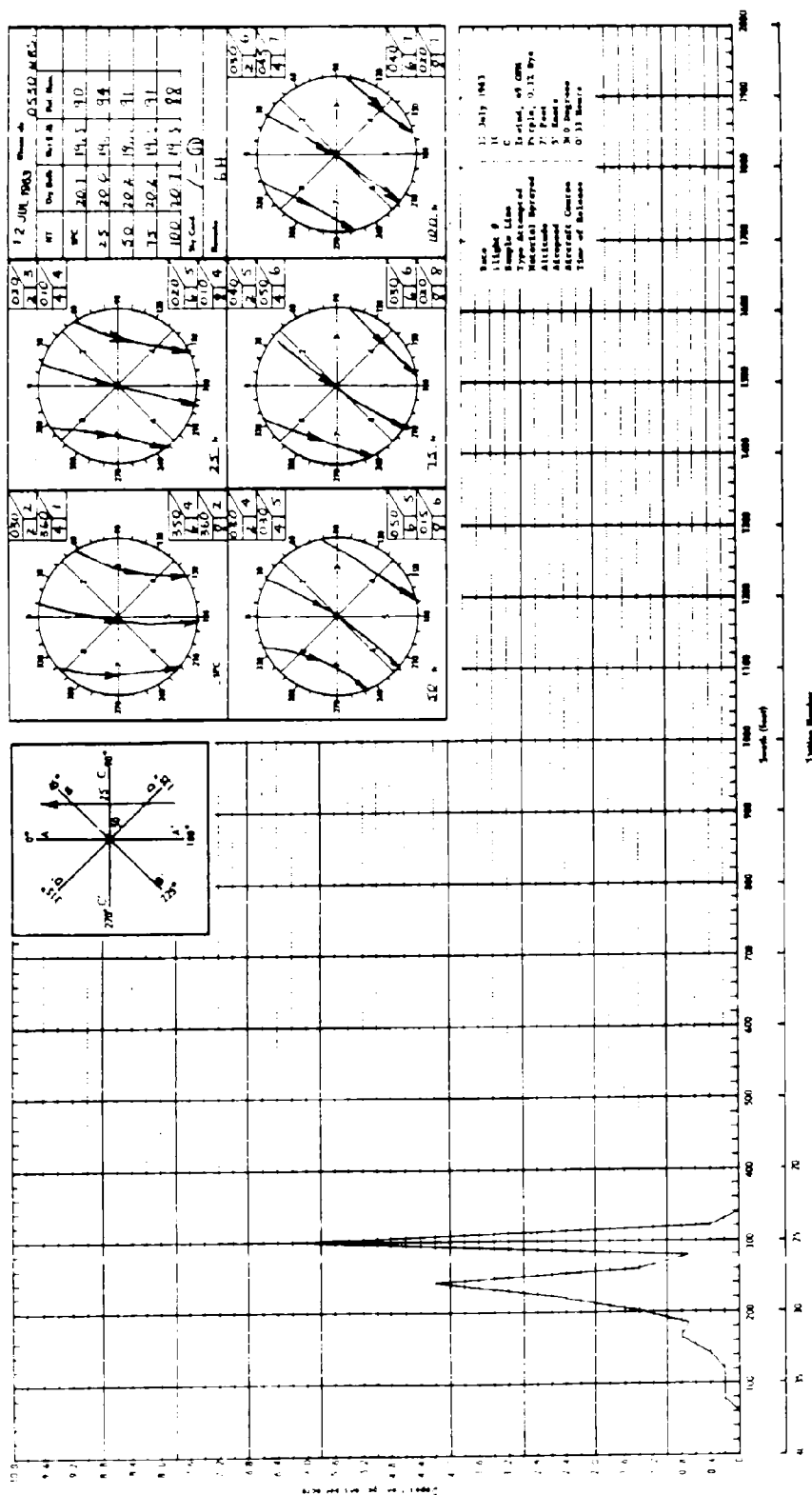
Total 19.0

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 12 July 1963 SYSTEM: HIDAL
 FLIGHT #: 10 AIRSPEED: 55 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0533 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 13 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------|--------|---------|--------|---------|--------|
| Stations 1 - 22 | Blank | 23 | 0.0 | | | | |
| | | 24 | 0.4 | | | | |
| | | 25 | 5.9 | | | | |
| | | 26 | 0.7 | | | | |
| | | 27 | 1.4 | | | | |
| | | 28 | 4.2 | | | | |
| | | 29 | 2.6 | | | | |
| | | 30 | 1.3 | | | | |
| | | 31 | 0.7 | | | | |
| | | 32 | 0.8 | | | | |
| | | 33 | 0.4 | | | | |
| | | 34 | 0.2 | | | | |
| | | 35 | 0.2 | | | | |
| | | 36 | 0.2 | | | | |
| | | 37 | 0.0 | | | | |
| | | Stations 38 - 100 | Blank | | | | |

Total 19.0



MASS MEDIAN DIAMETER

DATE: 12 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 11 PAPER: Kromakote, white
 SAMPLE LINE: A MATERIAL: Purple
 FLOW RATE: 69 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 30 | 2 | 7400 | | | |
| 26 | 1 | 7300 | | | |
| 26 | 3 | 6400* | | | |
| 26 | 8 | 6300 | | | |
| 29 | 4 | 6200 | 35 | 1A | 100(smallest) |
| 26 | 5 | 6100 | | | |
| 26 | 6 | 6000 | | | |
| 30 | 10 | 5900 | | | |
| 26 | 7 | 5700 | | | |
| 30 | 9 | 5600 | | | |
| 26 | 11 | 5500 | | | |

$$MMD = \frac{70.44 + 0.1431(\text{Spot D Max.})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(6400)}{2.2} = 448.3 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(7400) = 1129.4 \text{ Microns}$$

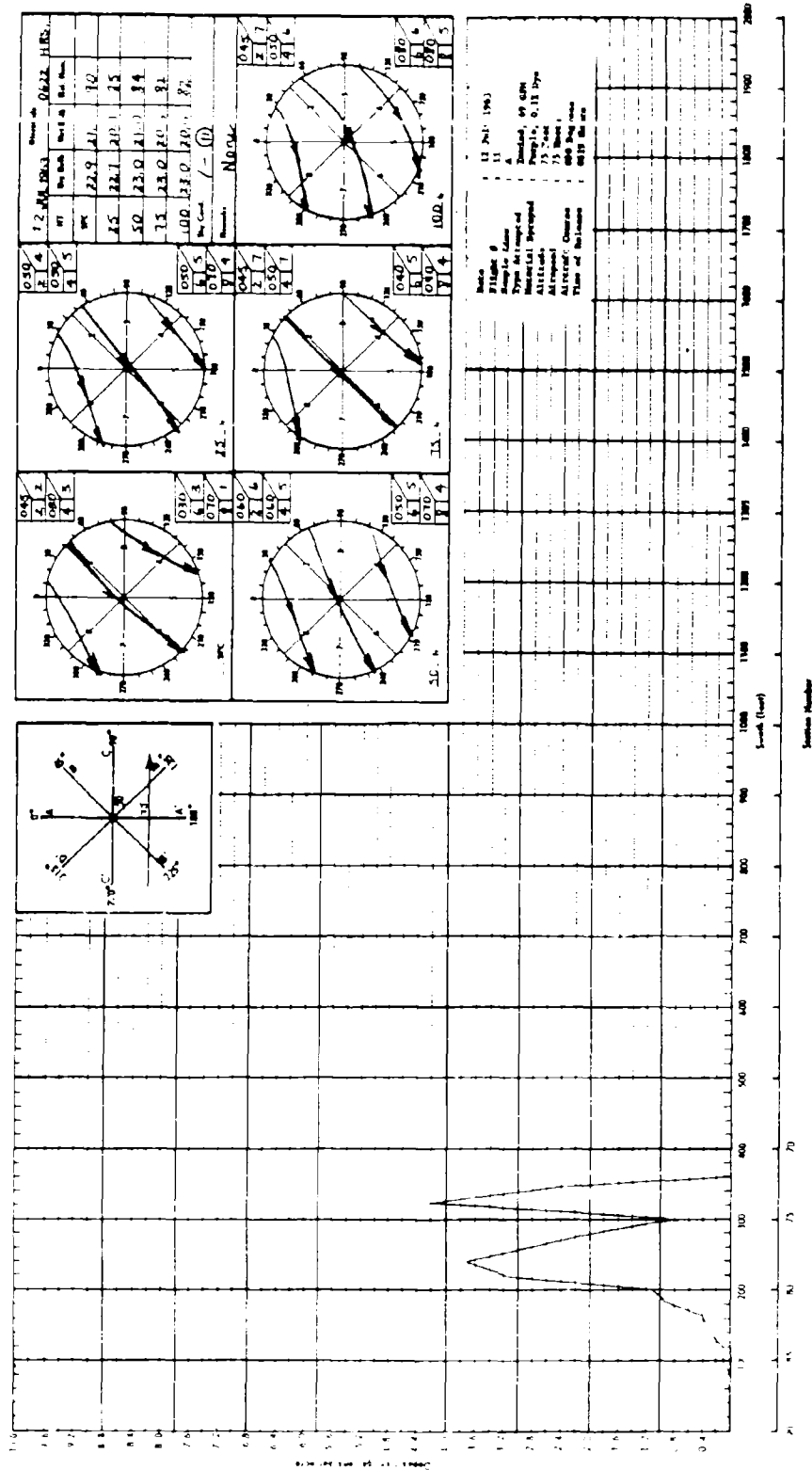
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 12 July 1963 SYSTEM: HIDAL
 FLIGHT #: 11 AIRSPEED: 75 Knots
 SAMPLE LINE: A ALTITUDE: 75 Feet
 TIME OF RELEASE: 0620 Hours AIRCRAFT COURSE: 090 Degrees
 DURATION: 11 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|---------|--------|---------|--------|-------------------|--------|
| Stations 1 - 71 | Blank | | | | | 72 | 0.0 |
| | | | | | | 73 | 2.4 |
| | | | | | | 74 | 4.2 |
| | | | | | | 75 | 0.9 |
| | | | | | | 76 | 2.0 |
| | | | | | | 77 | 2.8 |
| | | | | | | 78 | 3.7 |
| | | | | | | 79 | 3.1 |
| | | | | | | 80 | 1.1 |
| | | | | | | 81 | 0.9 |
| | | | | | | 82 | 0.4 |
| | | | | | | 83 | 0.3 |
| | | | | | | 84 | 0.1 |
| | | | | | | 85 | 0.1 |
| | | | | | | Stations 86 - 100 | Blank |

Total 22.0

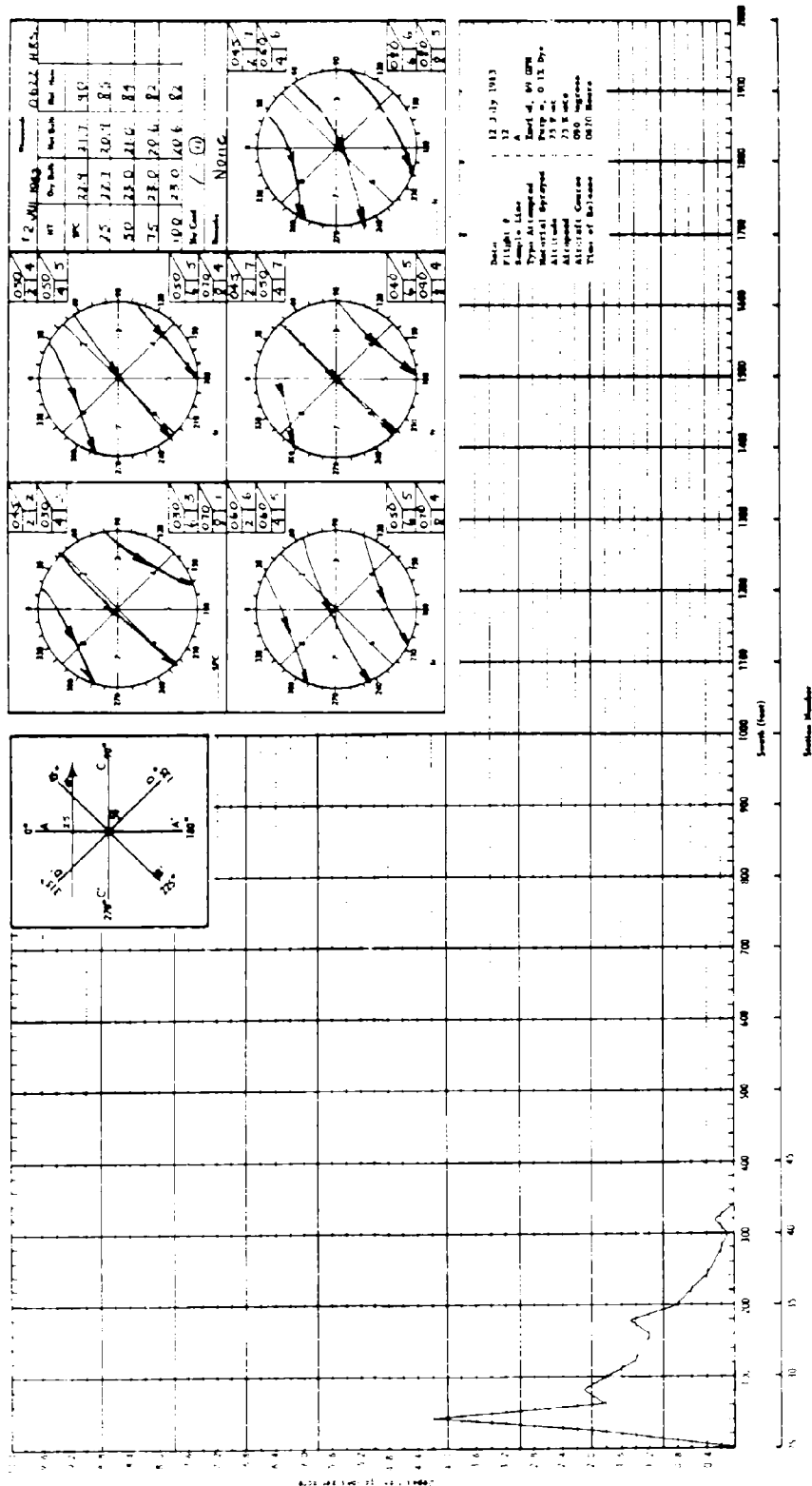


MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 12 July 1963 SYSTEM: HIDAL
 FLIGHT #: 12 AIRSPEED: 75 Knots
 SAMPLE LINE: A ALTITUDE: 75 Feet
 TIME OF RELEASE: 0619 Hours AIRCRAFT COURSE: 090 Degrees
 DURATION: 12 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------------|--------|---------|--------|---------|--------|
| Stations 1 - 24 | Blank | 25 | 0.0 | | | | |
| | | 26 | 1.9 | | | | |
| | | 27 | 4.2 | | | | |
| | | 28 | 1.8 | | | | |
| | | 29 | 2.1 | | | | |
| | | 30 | 1.8 | | | | |
| | | 31 | 1.4 | | | | |
| | | 32 | 1.3 | | | | |
| | | 33 | 1.2 | | | | |
| | | 34 | 1.5 | | | | |
| | | 35 | 0.8 | | | | |
| | | 36 | 0.6 | | | | |
| | | 37 | 0.4 | | | | |
| | | 38 | 0.3 | | | | |
| | | 39 | 0.2 | | | | |
| | | 40 | 0.1 | | | | |
| | | 41 | 0.3 | | | | |
| | | 42 | 0.0 | | | | |
| | | Stations 43 - 100 Blank | | | | | |

Total 19.9



MASS DEPOSIT

| | |
|------------------------------------|-------------------------------------|
| MATERIAL: <u>Purple</u> | FLOW RATE: <u>69</u> GPM |
| DATE: <u>12 July 1963</u> | SYSTEM: <u>HIDAL</u> |
| FLIGHT #: <u>13</u> | AIRSPEED: <u>55</u> Knots |
| SAMPLE LINE: <u>D</u> | ALTITUDE: <u>75</u> Feet |
| TIME OF RELEASE: <u>0645</u> Hours | AIRCRAFT COURSE: <u>045</u> Degrees |
| DURATION: <u>12</u> Sec. | |

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------------|--------|---------|--------|-------------------------|--------|---------|--------|
| Stations 1 - 65 Blank | | | | 66 | 1.1 | | |
| | | 67 | 1.0 | | | | |
| | | 68 | 1.8 | | | | |
| | | 69 | 1.6 | | | | |
| | | 70 | 1.2 | | | | |
| | | 71 | 1.7 | | | | |
| | | 72 | 1.7 | | | | |
| | | 73 | 4.0 | | | | |
| | | 74 | 2.6 | | | | |
| | | 75 | 1.8 | | | | |
| | | 76 | 6.6 | | | | |
| | | | | Stations 77 - 100 Blank | | | |

Total 25.1

MASS MEDIAN DIAMETER

DATE: 12 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 14 PAPER: Kromekote, white
 SAMPLE LINE: D MATERIAL: Purple
 FLOW RATE: 69 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 25 | 1 | 7200 | | | |
| 23 | 3 | 6600* | | | |
| 23 | 2 | 6500 | | | |
| 23 | 4 | 6400 | | | |
| 22 | 7 | 6300 | 19 | 1A | 100(smallest) |
| 22 | 10 | 6200 | | | |
| 23 | 5 | 6100 | | | |
| 23 | 9 | 6000 | | | |
| 23 | 6 | 5900 | | | |
| 22 | 8 | 5800 | | | |

$$\text{MMD} = \frac{70.44 + 0.1431(\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(6600)}{2.2} = 461.3 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(7200) = 1100.8 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

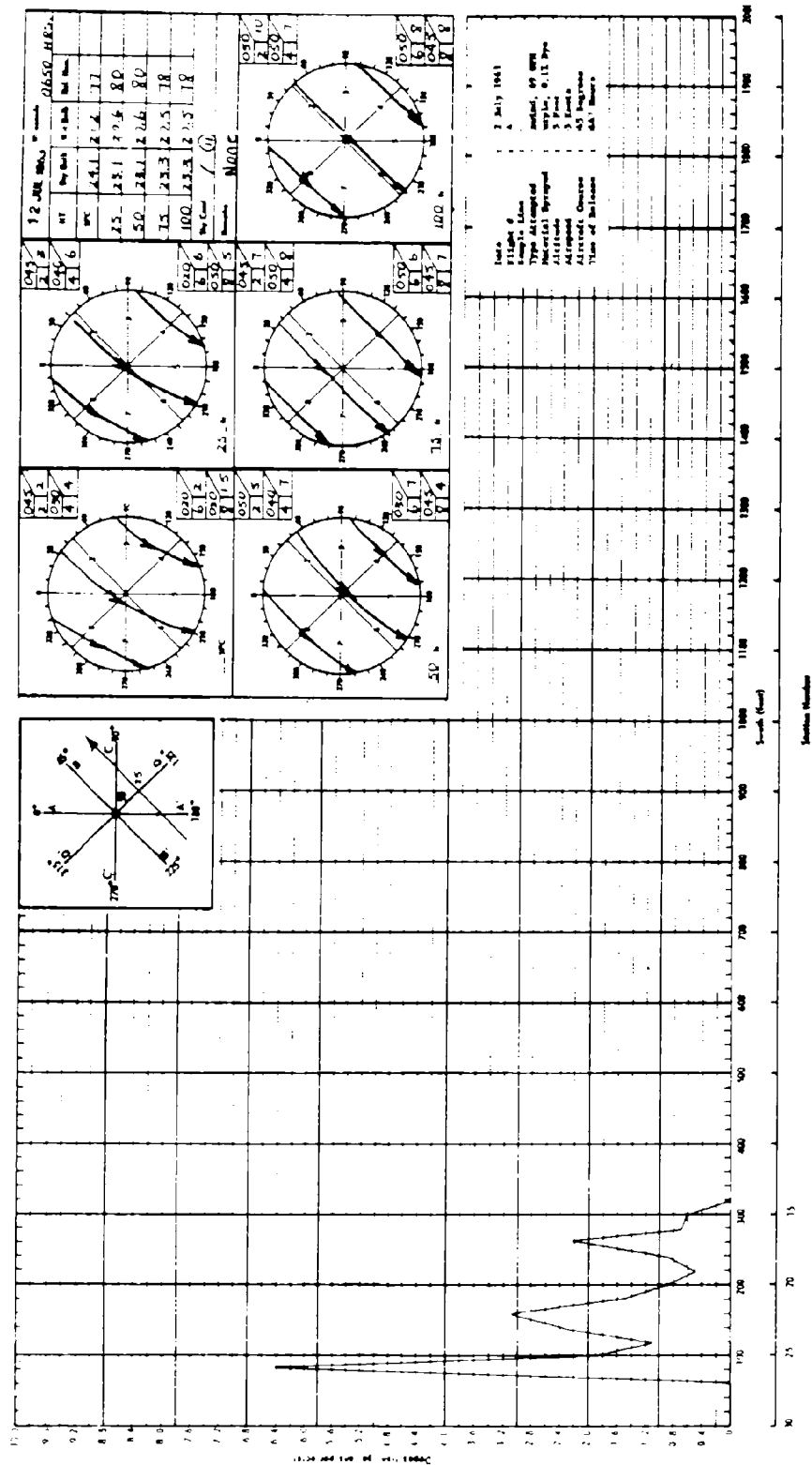
| | |
|------------------------------------|-------------------------------------|
| MATERIAL: <u>Purple</u> | FLOW RATE: <u>69</u> GPM |
| DATE: <u>12 July 1963</u> | SYSTEM: <u>HIDAL</u> |
| FLIGHT #: <u>14</u> | AIRSPED: <u>55</u> Knots |
| SAMPLE LINE: <u>D</u> | ALTITUDE: <u>75</u> Feet |
| TIME OF RELEASE: <u>0647</u> Hours | AIRCRAFT COURSE: <u>045</u> Degrees |
| DURATION: <u>14</u> Sec. | |

| | | | |
|------------------------------|----------------|----------------|----------------|
| STATION G.P.A. | STATION G.P.A. | STATION G.P.A. | STATION G.P.A. |
| <u>Stations 1 - 14 Blank</u> | | | |

| | |
|----|-----|
| 15 | 0.6 |
| 16 | 0.7 |
| 17 | 2.2 |
| 18 | 0.9 |
| 19 | 0.5 |
| 20 | 0.9 |
| 21 | 1.5 |
| 22 | 3.1 |
| 23 | 2.3 |
| 24 | 1.1 |
| 25 | 1.9 |
| 26 | 6.4 |

Stations 27 - 100 Blank

Total 22.1



H-34/HIBAL GROUND FLOW AND FLIGHT DATA

| | |
|---|--|
| DATE CALIBRATED: <u>7 July 1963</u> | DATE TEST FLOWN: <u>13 July 1963</u> |
| LIQUID SPRAYED: <u>Purple</u> | TOTAL NOZZLES OPEN: <u>60</u> |
| NOZZLE TYPE: <u>Check Valves</u> | LIQUID TEMP: <u>38.5° C</u> |
| DURATION OF SPRAY: <u>30</u> <u>Sec.</u> | PUMP PRESSURE: <u>23.5</u> <u>PSI</u> |
| TOTAL AMOUNT SPRAYED: <u>34.5</u> <u>Gal.</u> | FLOW RATE CALIBRATED: <u>69</u> <u>GPM</u> |

OPERATIONAL DATA DURING FLIGHT

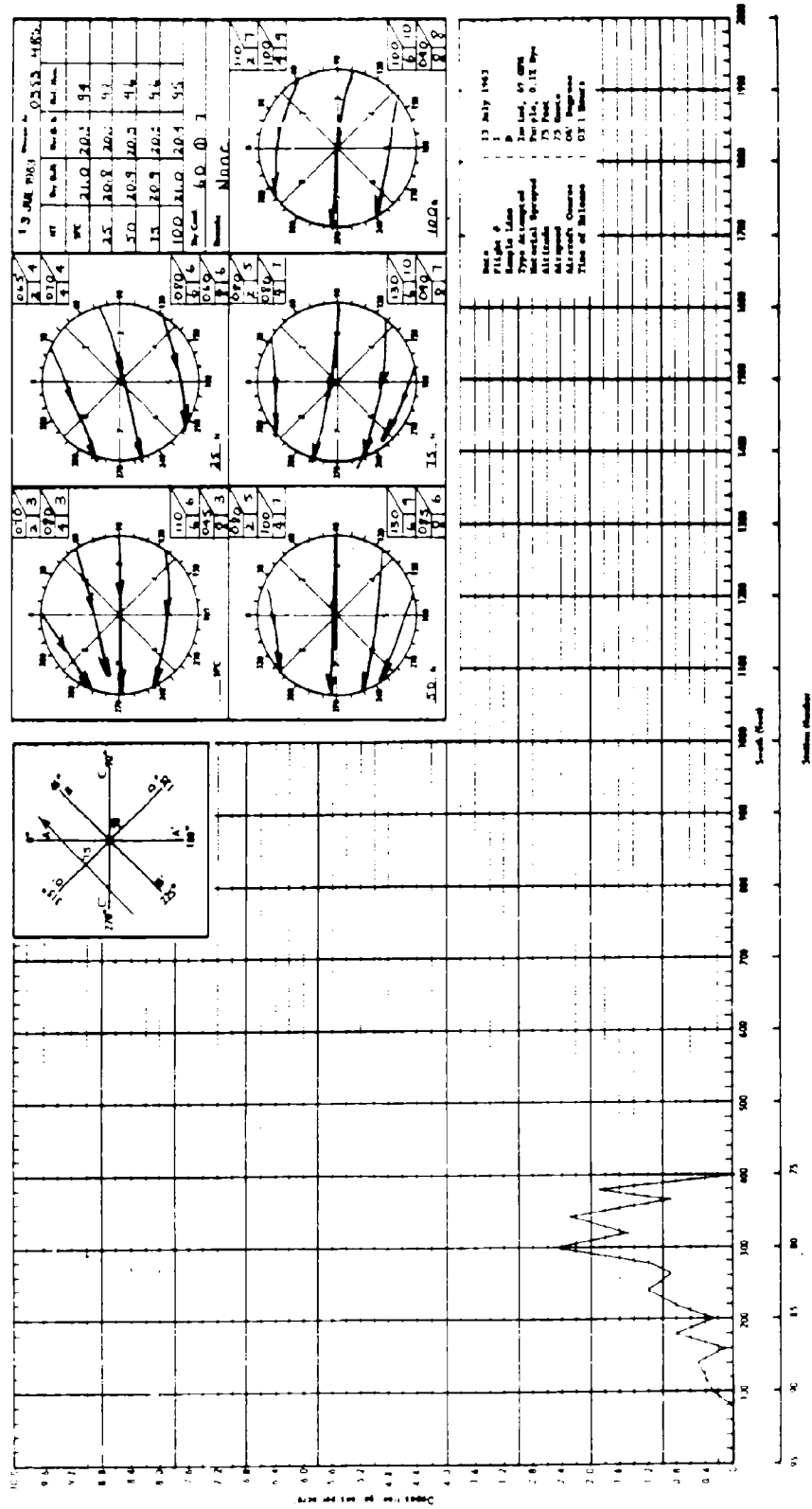
Above information is for Runs 1 - 18.

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 1 AIRSPEED: 75 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0351 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: _____

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|---------|--------|---------|--------|-------------------|--------|
| Stations 1 - 75 | Blank | | | | | 76 | 1.9 |
| | | | | | | 77 | 0.9 |
| | | | | | | 78 | 2.3 |
| | | | | | | 79 | 1.5 |
| | | | | | | 80 | 2.5 |
| | | | | | | 81 | 1.2 |
| | | | | | | 82 | 0.9 |
| | | | | | | 83 | 1.2 |
| | | | | | | 84 | 0.8 |
| | | | | | | 85 | 0.3 |
| | | | | | | 86 | 0.8 |
| | | | | | | 87 | 0.1 |
| | | | | | | 88 | 0.5 |
| | | | | | | 89 | 0.4 |
| | | | | | | 90 | 0.3 |
| | | | | | | 91 | 0.0 |
| | | | | | | Stations 92 - 100 | |
| | | | | | | Blank | |

Total 15.6



MASS MEDIAN DIAMETER

DATE: 13 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 2 PAPER: Kromekote, white
 SAMPLE LINE: D MATERIAL: Purple
 FLOW RATE: 69 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 29 | 1 | 8500 | | | |
| 26 | 2 | 7200 | | | |
| 26 | 3 | 6500 | | | |
| 29 | 7 | 6100* | | | |
| 29 | 6 | 6000 | 36 | 1A | 100(smallest) |
| 30 | 8 | 5900 | | | |
| 30 | 9 | 5800 | | | |
| 26 | 4 | 5700 | | | |
| 30 | 10 | 5600 | | | |
| 29 | 5 | 5500 | | | |
| 26 | 11 | 5400 | | | |

$$MMD = \frac{70.44 + 0.1431 \text{Spot D Max}}{\text{Con. Factor}} = \frac{70.44 + 0.1431(6100)}{2.2} = 428.8 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(8500) = 1286.8 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 2 AIRSPEED: 75 Knot
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0353 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: ---

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------|--------|---------|--------|---------|--------|
| Stations 1 - 25 | Blank | 26 | 1.7 | | | | |
| | | 27 | 4.0 | | | | |
| | | 28 | 1.1 | | | | |
| | | 29 | 1.6 | | | | |
| | | 30 | 2.3 | | | | |
| | | 31 | 2.3 | | | | |
| | | 32 | 0.3 | | | | |
| | | 33 | 0.7 | | | | |
| | | 34 | 0.5 | | | | |
| | | 35 | 0.5 | | | | |
| | | 36 | 0.6 | | | | |
| | | 37 | 0.5 | | | | |
| | | 38 | 0.0 | | | | |
| | | Stations 39 - 100 | Blank | | | | |

Total 16.1

MASS DEPOSIT

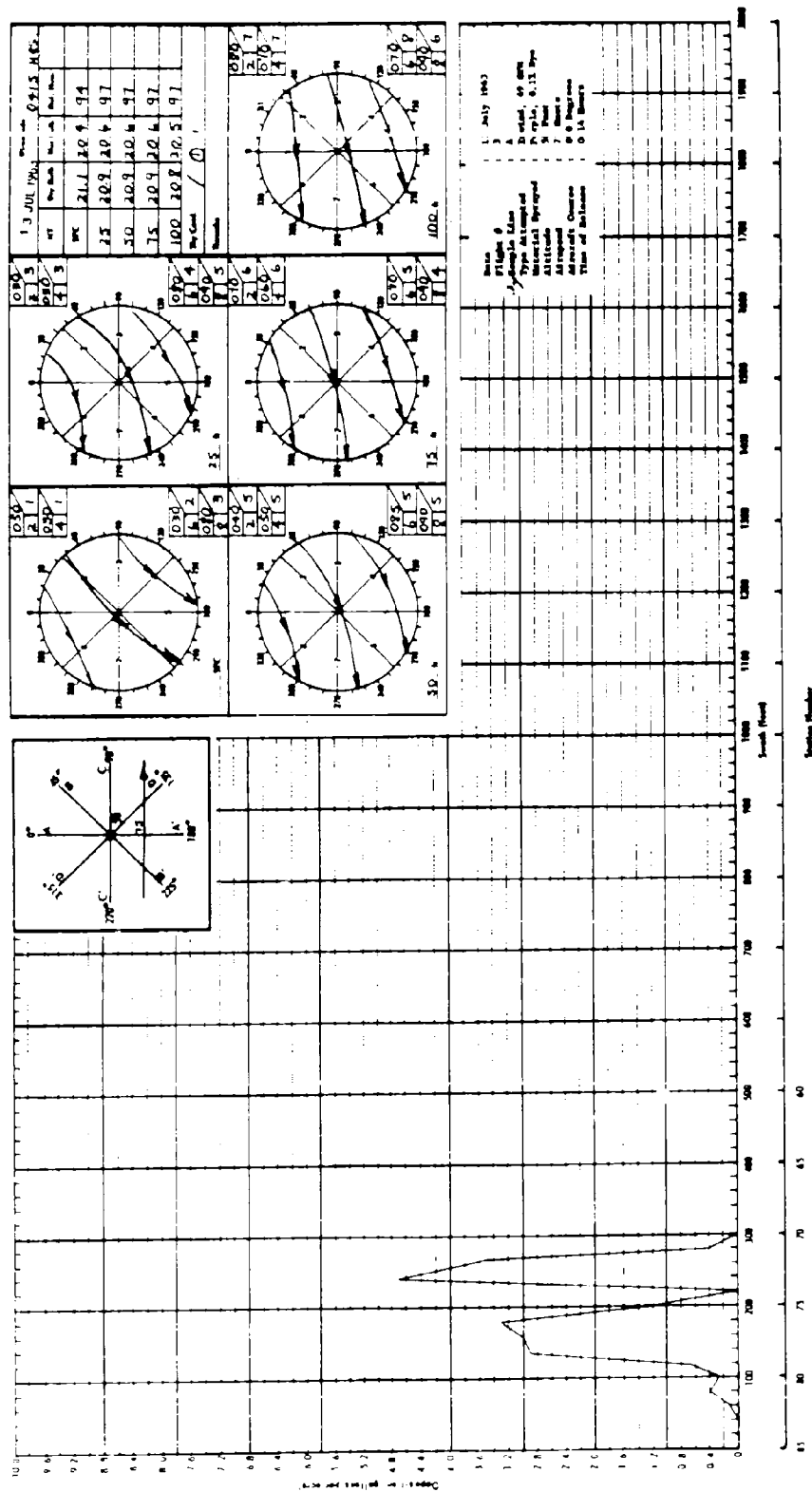
MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 3 AIRSPEED: 75 Knots
 SAMPLE LINE: A ALTITUDE: 50 Feet
 TIME OF RELEASE: 0414 Hours AIRCRAFT COURSE: 090 Degrees
 DURATION: 12 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 70 Blank

71 0.4
 72 3.5
 73 4.7
 74 0.0
 75 1.2
 76 3.3
 77 3.0
 78 2.9
 79 0.7
 80 0.3
 81 0.4
 82 0.1

Stations 83 - 100 Blank

Total 20.5



MASS MEDIAN DIAMETER

DATE: 13 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 4PAPER: Kromekote, whiteSAMPLE LINE: AMATERIAL: PurpleFLOW RATE: 69 GPMSYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 27 | 4 | 7600 | | | |
| 27 | 1 | 7000 | | | |
| 27 | 2 | 6800* | | | |
| 27 | 9 | 6700 | | | |
| 27 | 3 | 6600 | | | |
| 27 | 11 | 6400 | 8 | 1A | 100(smallest) |
| 27 | 6 | 6300 | | | |
| 27 | 10 | 6200 | | | |
| 27 | 5 | 6100 | | | |
| 27 | 8 | 6000 | | | |
| 27 | 7 | 5900 | | | |

$$\text{MMD} = \frac{70.44 + 0.1431(\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(6800)}{2.2} = 474.3 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(7600) = 1158.0 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

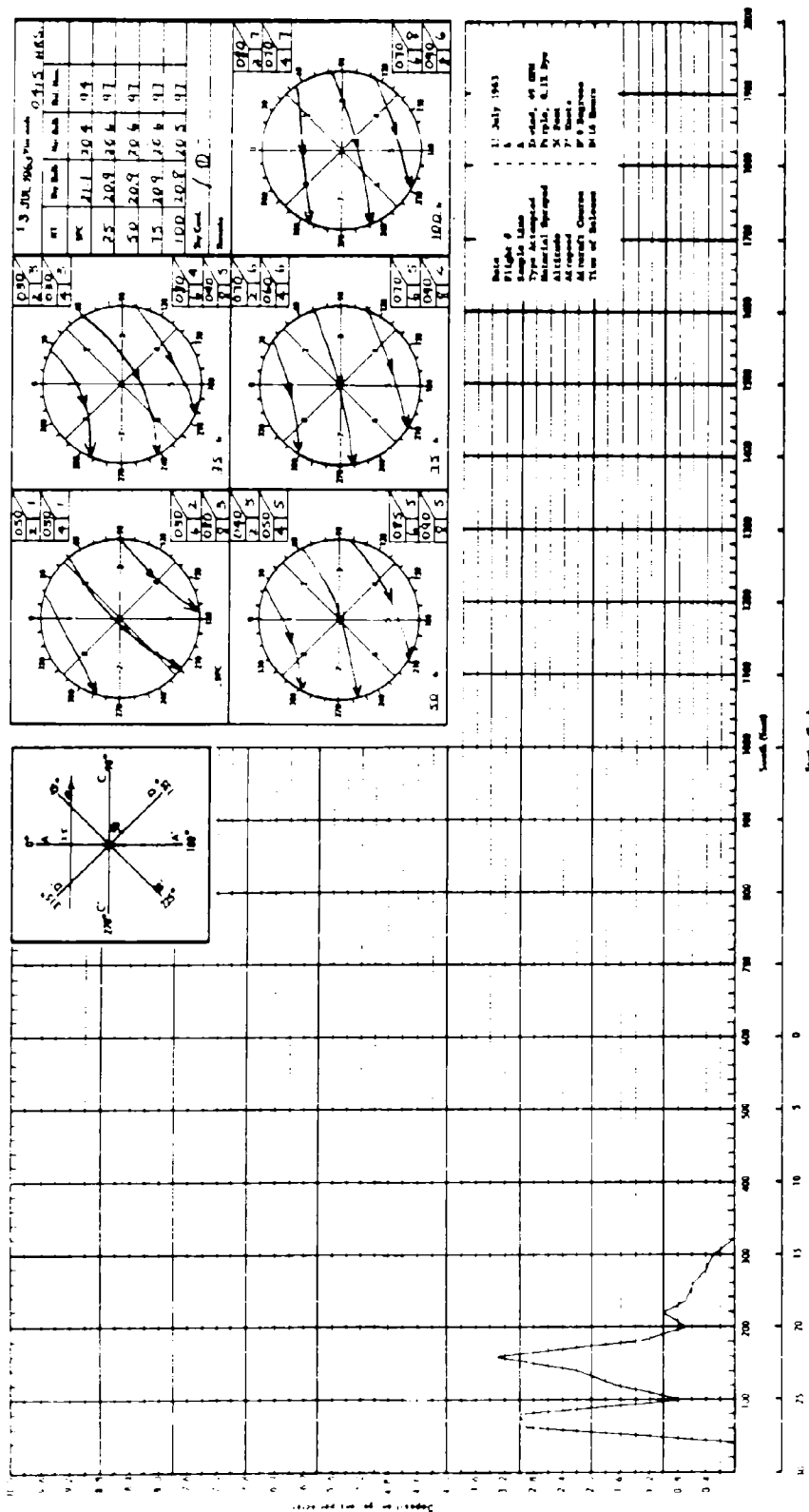
MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 4 AIRSPEED: 75 Knots
 SAMPLE LINE: A ALTITUDE: 50 Feet
 TIME OF RELEASE: 0416 Hours AIRCRAFT COURSE: 090 Degrees
 DURATION: 11 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 13 Blank

14 0.0
 15 0.3
 16 0.4
 17 0.6
 18 0.7
 19 1.0
 20 0.7
 21 1.3
 22 3.3
 23 2.2
 24 1.7
 25 0.8
 26 3.0
 27 2.5

Stations 28 - 100 Blank

Total 20.0



MASS DEPOSIT

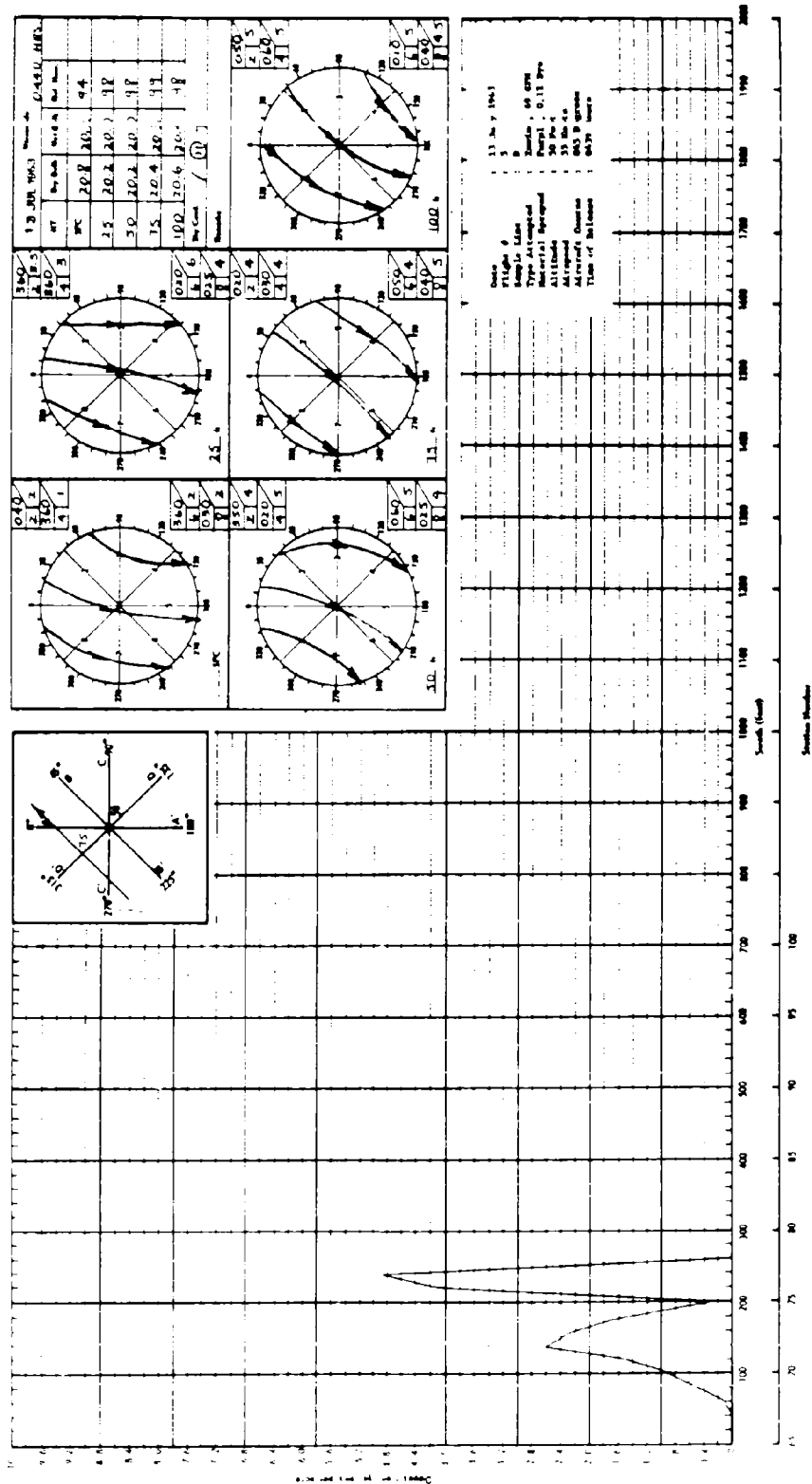
MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 5 AIRSPEED: 55 Knots
 SAMPLE LINE: D ALTITUDE: 50 Feet
 TIME OF RELEASE: 0439 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 13 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 63 Blank

| | |
|----|-----|
| 64 | 0.0 |
| 65 | 0.0 |
| 66 | 0.0 |
| 67 | 0.0 |
| 68 | 0.1 |
| 69 | 0.5 |
| 70 | 0.9 |
| 71 | 1.5 |
| 72 | 2.6 |
| 73 | 2.3 |
| 74 | 1.7 |
| 75 | 0.3 |
| 76 | 4.1 |
| 77 | 4.9 |

Stations 78 - 100 Blank

Total 18.9



MASS MEDIAN DIAMETER

DATE: 13 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 6 PAPER: Kromekote, white
 SAMPLE LINE: D MATERIAL: Purple
 FLOW RATE: 69 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|----------------|
| 23 | 1 | 8800 | | | |
| 24 | 6 | 7600 | | | |
| 23 | 3 | 7000* | | | |
| 23 | 2 | 6800 | | | |
| 23 | 4 | 6600 | 14 | 1A | 100 (smallest) |
| 22 | 9 | 6500 | | | |
| 22 | 10 | 6400 | | | |
| 23 | 5 | 6300 | | | |
| 25 | 8 | 6200 | | | |
| 24 | 7 | 6100 | | | |
| 25 | 11 | 6000 | | | |

$$\text{MMD} = \frac{70.44 + 0.1431(\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(7000)}{2.2} = 487.3 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(8800) = 1329.7 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 6 AIRSPEED: 55 Knots
 SAMPLE LINE: D ALTITUDE: 50 Feet
 TIME OF RELEASE: 0441 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 16 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 15 Blank

16 0.0
 17 0.2
 18 0.2
 19 0.7
 20 2.1
 21 2.7
 22 2.9
 23 2.7
 24 0.7
 25 1.0
 26 7.8
 27 1.2

Stations 28 - 100 Blank

Total 22.2

MASS DEPOSIT

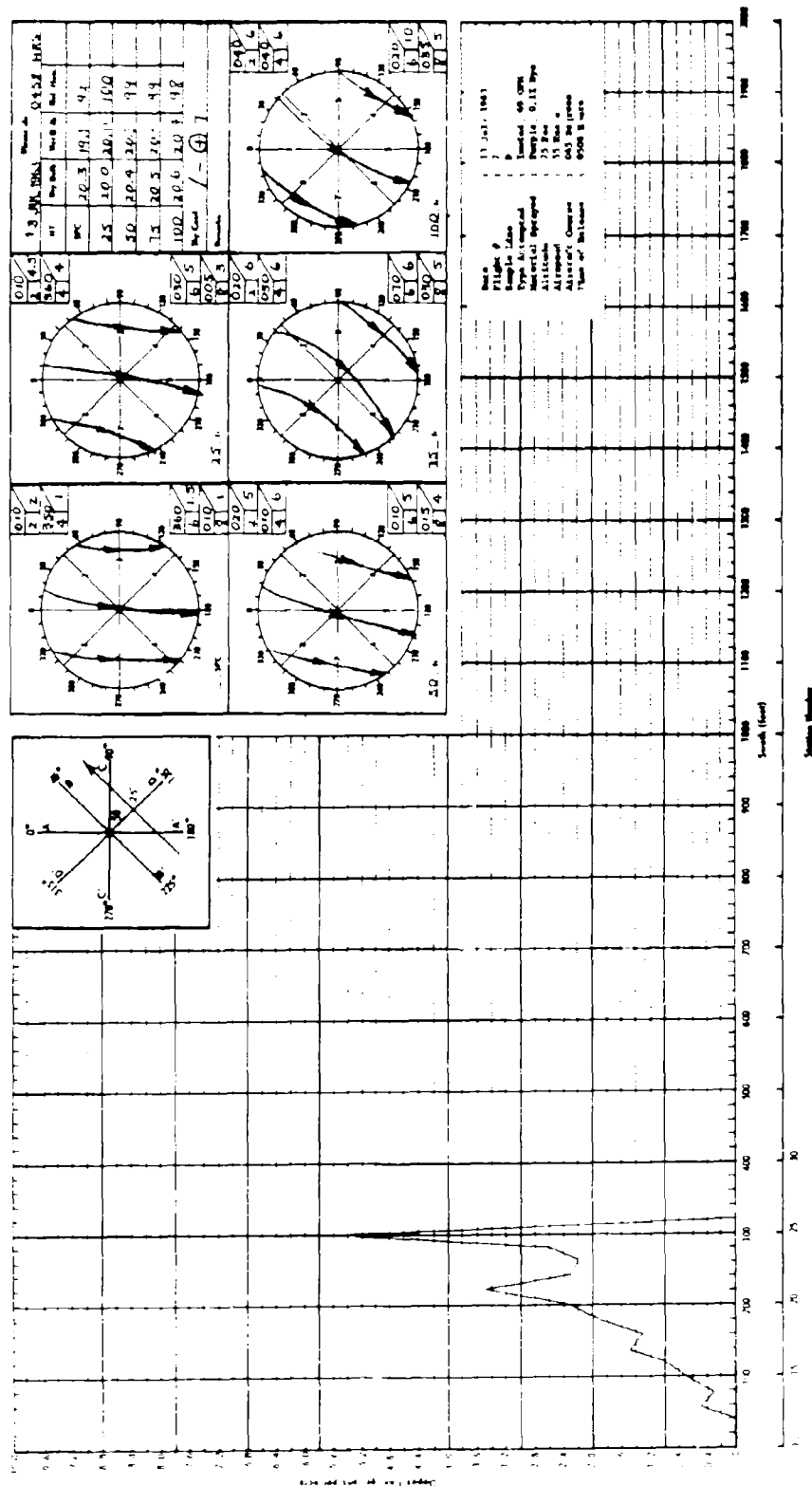
MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 7 AIRSPEED: 55 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0500 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 12 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 12 Blank

13 0.5
 14 0.3
 15 0.7
 16 1.0
 17 1.5
 18 1.3
 19 1.9
 20 2.3
 21 3.5
 22 2.3
 23 2.2
 24 2.6
 25 5.3
 26 0.0

Stations 27 - 100 Blank

Total 25.4



MASS DEPOSIT

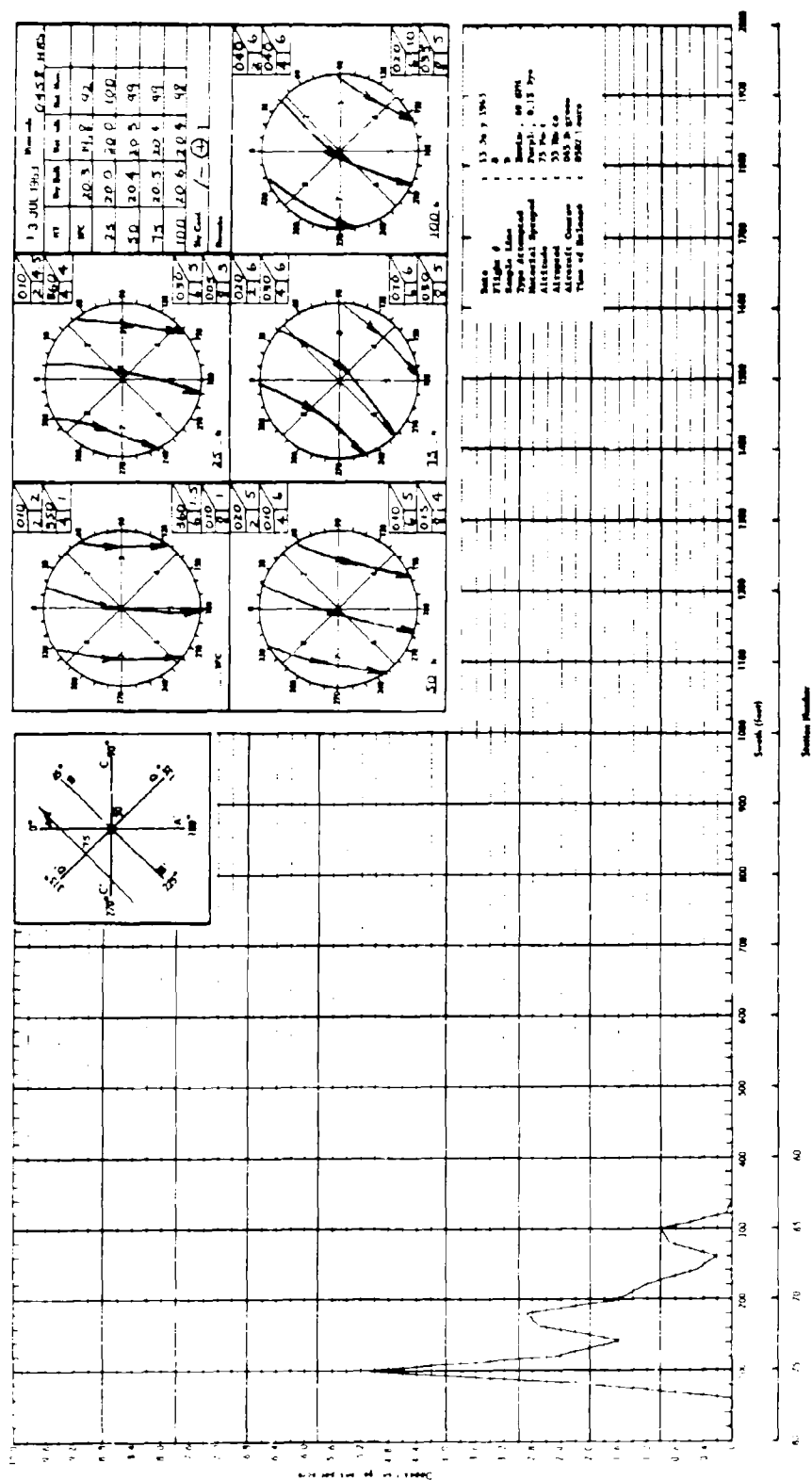
MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 8 AIRSPEED: 55 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0502 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 15 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 63 Blank

64 0.1
 65 1.0
 66 0.9
 67 0.2
 68 0.5
 69 1.2
 70 1.6
 71 2.9
 72 2.7
 73 1.6
 74 2.2
 75 5.1
 76 2.1

Stations 77 - 100 Blank

Total 22.1

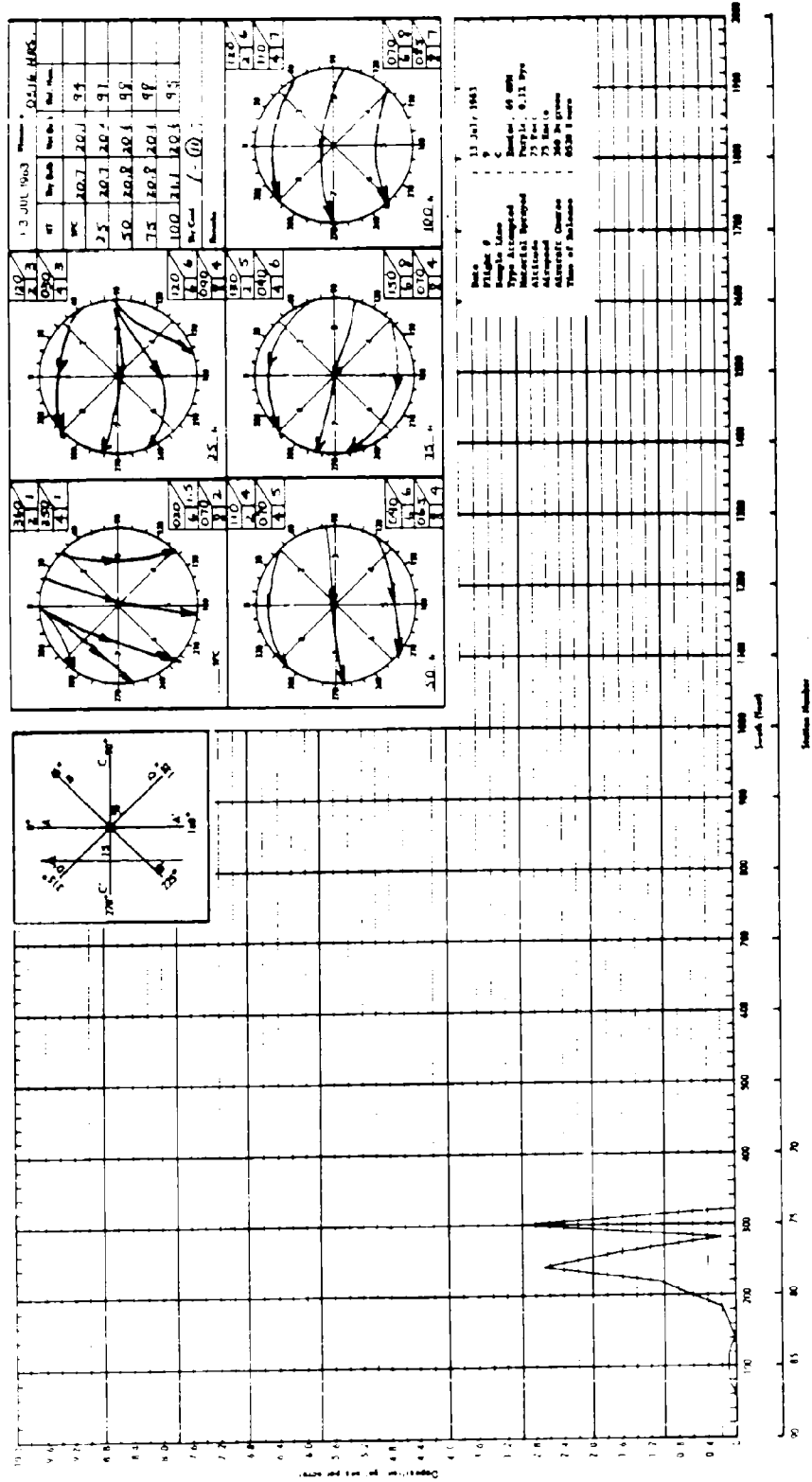


MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 9 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0520 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 13 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|---------|--------|---------|--------|-------------------|--------|
| Stations 1 - 74 | Blank | | | | | 75 | 3.0 |
| | | | | | | 76 | 0.2 |
| | | | | | | 77 | 1.5 |
| | | | | | | 78 | 2.7 |
| | | | | | | 79 | 1.1 |
| | | | | | | 80 | 0.6 |
| | | | | | | 81 | 0.2 |
| | | | | | | 82 | 0.1 |
| | | | | | | 83 | 0.0 |
| | | | | | | 84 | 0.1 |
| | | | | | | 85 | 0.1 |
| | | | | | | 86 | 0.1 |
| | | | | | | 87 | 0.0 |
| | | | | | | 88 | 0.0 |
| | | | | | | Stations 89 - 100 | |
| | | | | | | Blank | |

Total 9.7

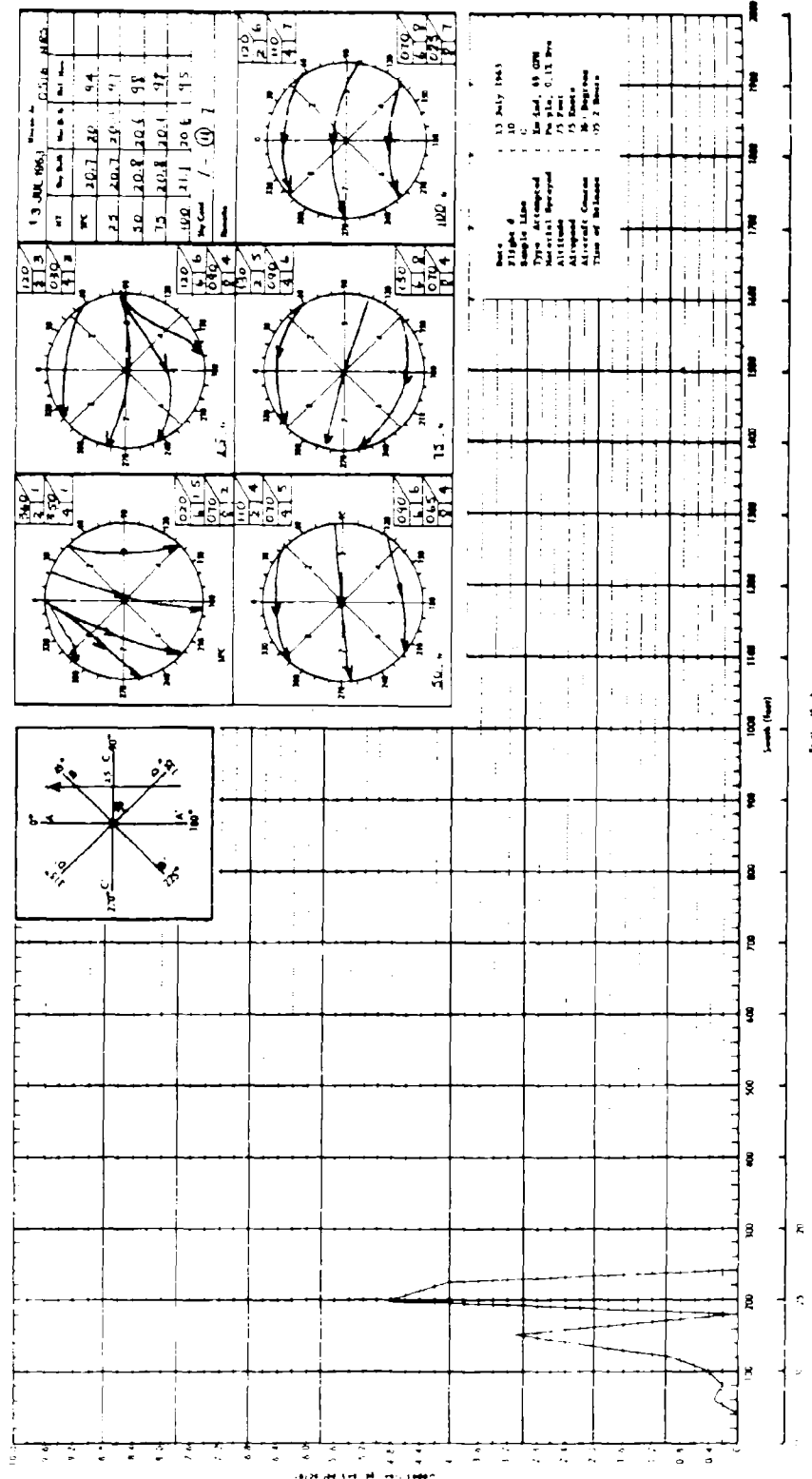


MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 10 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0522 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 15 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------|--------|---------|--------|---------|--------|
| Stations 1 - 23 | Blank | 24 | 4.0 | | | | |
| | | 25 | 4.8 | | | | |
| | | 26 | 0.1 | | | | |
| | | 27 | 3.1 | | | | |
| | | 28 | 2.2 | | | | |
| | | 29 | 0.9 | | | | |
| | | 30 | 0.4 | | | | |
| | | 31 | 0.2 | | | | |
| | | 32 | 0.3 | | | | |
| | | 33 | 0.0 | | | | |
| | | 34 | 0.0 | | | | |
| | | 35 | 0.0 | | | | |
| | | 36 | 0.0 | | | | |
| | | Stations 37 - 100 | Blank | | | | |

Total 16.0



MASS MEDIAN DIAMETER

DATE: 13 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 11 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: Purple
 FLOW RATE: 69 GPM SYSTEM: Hidal

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 74 | 1 | 7100 | | | |
| 74 | 2 | 6400* | | | |
| 72 | 7 | 6300 | | | |
| 72 | 6 | 6200 | | | |
| 74 | 4 | 6100 | 74 | 1A | 100(smallest) |
| 74 | 3 | 5900 | | | |
| 74 | 5 | 5800 | | | |
| 73 | 8 | 5700 | | | |
| 74 | 9 | 5600 | | | |
| 74 | 10 | 5500 | | | |

$$MMD = \frac{70.44 + 0.1431(\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(6400)}{2.2} = 448.3 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(7100) = 1086.5 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 48 \text{ Microns}$$

MASS DEPOSIT

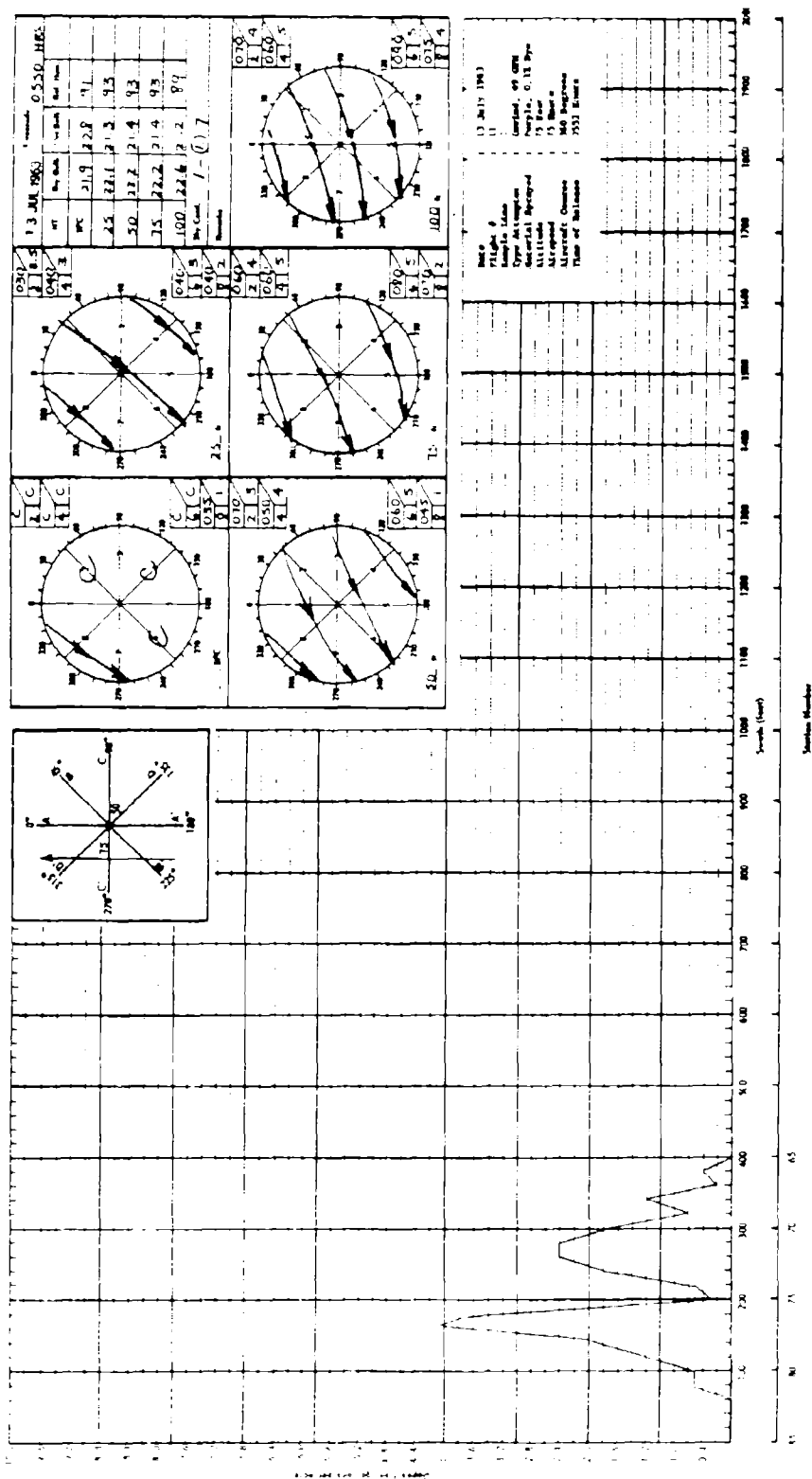
MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 11 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0552 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 15 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 65 Blank

66 0.4
 67 0.2
 68 1.2
 69 0.6
 70 1.8
 71 2.4
 72 2.4
 73 1.8
 74 0.5
 75 0.3
 76 3.7
 77 4.1
 78 2.0
 79 1.4
 80 0.5
 81 0.5

Stations 82 - 100 Blank

Total 23.8



MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 23 July 1963 SYSTEM: HIDAL
 FLIGHT #: 12 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0555 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 11 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------|--------|---------|--------|---------|--------|
| Stations 1 - 20 | Blank | 21 | 0.1 | | | | |
| | | 22 | 0.8 | | | | |
| | | 23 | 2.3 | | | | |
| | | 24 | 3.7 | | | | |
| | | 25 | 1.6 | | | | |
| | | 26 | 6.5 | | | | |
| | | 27 | 5.3 | | | | |
| | | 28 | 1.3 | | | | |
| | | 29 | 0.5 | | | | |
| | | 30 | 0.4 | | | | |
| | | 31 | 0.7 | | | | |
| | | 32 | 0.9 | | | | |
| | | 33 | 0.5 | | | | |
| | | 34 | 0.5 | | | | |
| | | 35 | 0.4 | | | | |
| | | 36 | 0.0 | | | | |
| | | Stations 37 - 100 | Blank | | | | |

Total 25.5

MASS MEDIAN DIAMETER

DATE: 13 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 13 PAPER: Kromekote, white
 SAMPLE LINE: D MATERIAL: Purple
 FLOW RATE: 69 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 77 | 1 | 8400 | | | |
| 75 | 4 | 6200* | | | |
| 77 | 2 | 6100 | | | |
| 77 | 5 | 5900 | | | |
| 77 | 8 | 5800 | 94 | 1A | 100(smallest) |
| 75 | 9 | 5700 | | | |
| 78 | 7 | 5500 | | | |
| 77 | 11 | 5400 | | | |
| 78 | 3 | 5300 | | | |
| 77 | 6 | 5200 | | | |
| 78 | 10 | 5000 | | | |

$$\text{MMD} = \frac{70.44 + 0.1431(\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(6200)}{2.2} = 435.3 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(8400) = 1202.0 \text{ Microns}$$

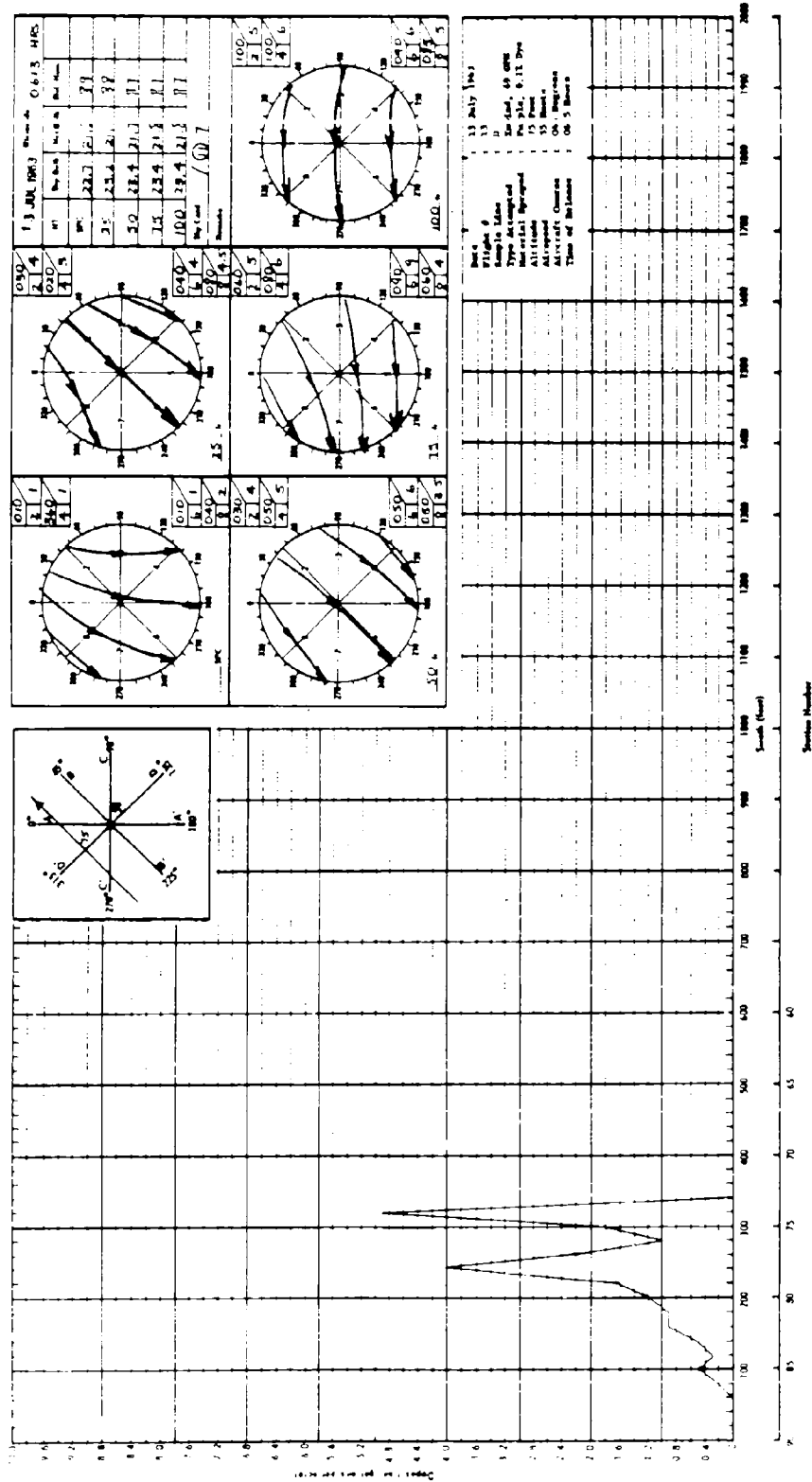
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 13 AIRSPEED: 55 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0615 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 13 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|---------|--------|---------|--------|-------------------|--------|
| Stations 1 - 73 | Blank | | | | | 74 | 4.9 |
| | | | | | | 75 | 1.8 |
| | | | | | | 76 | 1.0 |
| | | | | | | 77 | 2.2 |
| | | | | | | 78 | 4.0 |
| | | | | | | 79 | 1.6 |
| | | | | | | 80 | 1.2 |
| | | | | | | 81 | 0.9 |
| | | | | | | 82 | 0.9 |
| | | | | | | 83 | 0.5 |
| | | | | | | 84 | 0.3 |
| | | | | | | 85 | 0.5 |
| | | | | | | 86 | 0.2 |
| | | | | | | Stations 87 - 100 | |
| | | | | | | | Blank |

Total 20.8

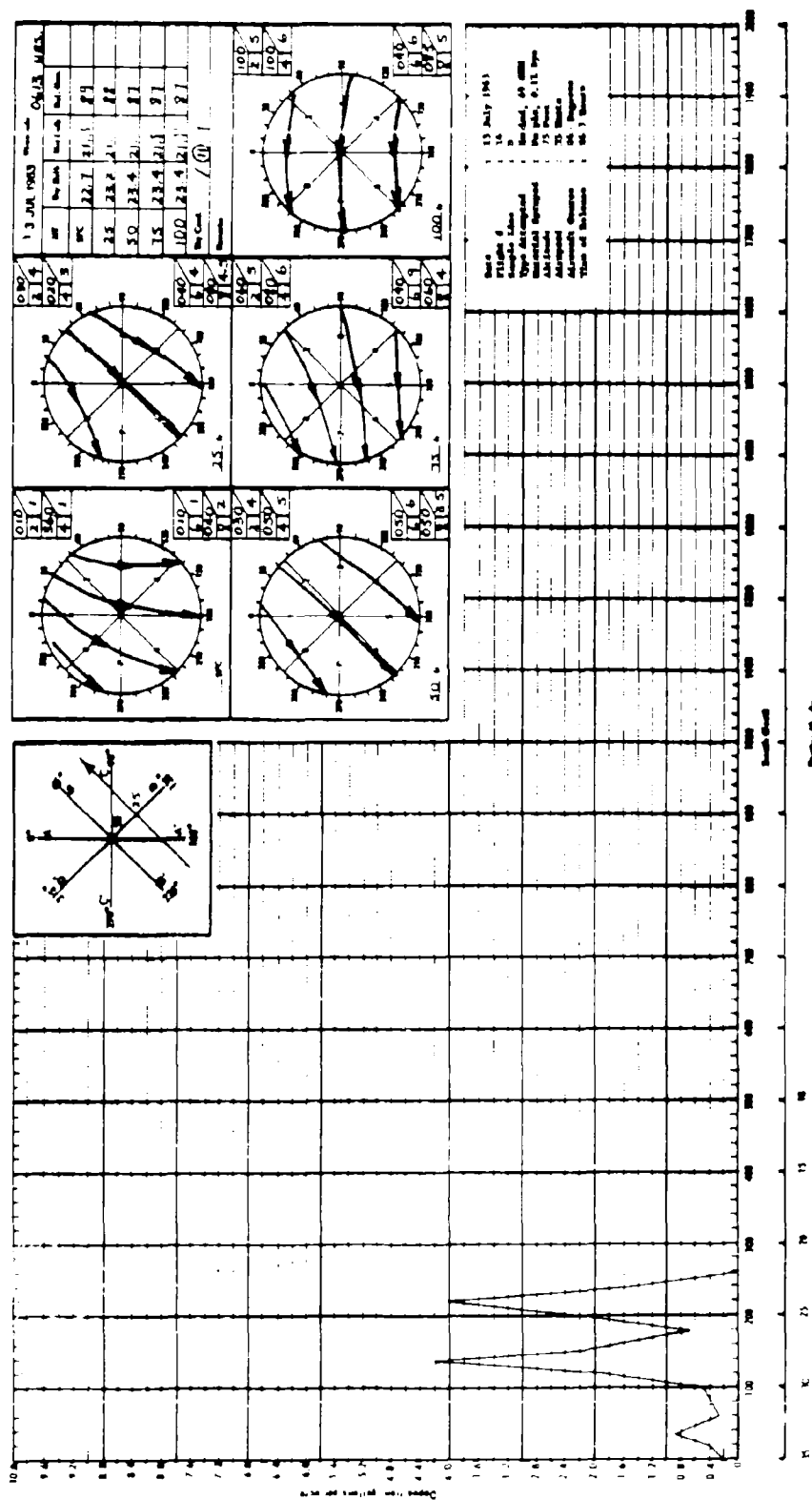


MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 14 AIRSPEED: 55 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0617 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 13 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------|--------|---------|--------|---------|--------|
| Stations 1 - 22 | Blank | 23 | 1.5 | | | | |
| | | 24 | 4.0 | | | | |
| | | 25 | 2.3 | | | | |
| | | 26 | 0.7 | | | | |
| | | 27 | 2.2 | | | | |
| | | 28 | 4.2 | | | | |
| | | 29 | 1.9 | | | | |
| | | 30 | 0.5 | | | | |
| | | 31 | 0.4 | | | | |
| | | 32 | 0.3 | | | | |
| | | 33 | 0.9 | | | | |
| | | 34 | 0.4 | | | | |
| | | 35 | 0.2 | | | | |
| | | Stations 36 - 100 | Blank | | | | |

Total 19.5



MASS DEPOSIT

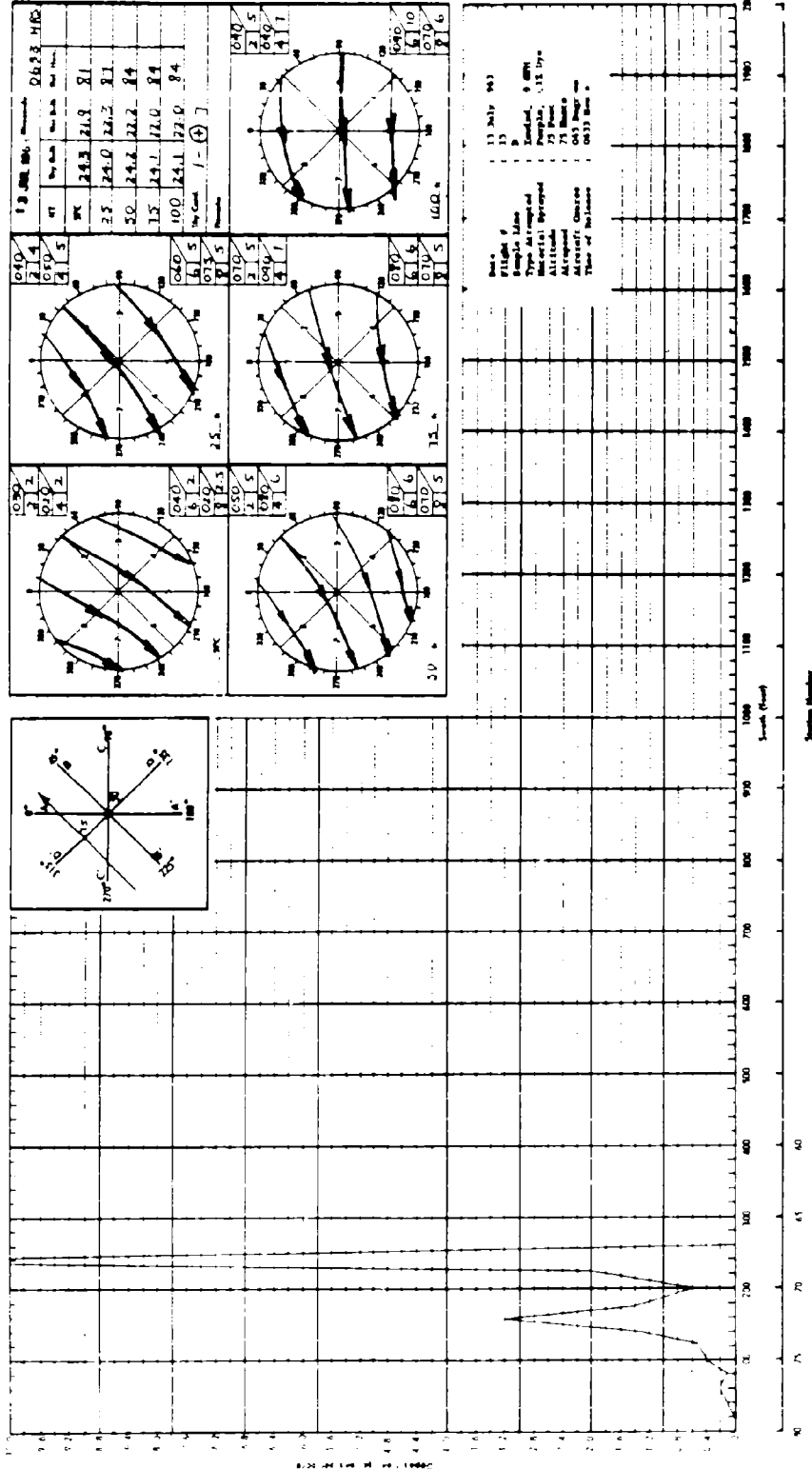
MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 15 AIRSPEED: 75 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0633 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 15 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
Stations 1 - 66 Blank

67 0.0
 68 11.8
 69 2.0
 70 0.6
 71 1.4
 72 3.2
 73 1.3
 74 0.5
 75 0.4
 76 0.1
 77 0.2
 78 0.1

Stations 79 - 100 Blank

Total 21.6

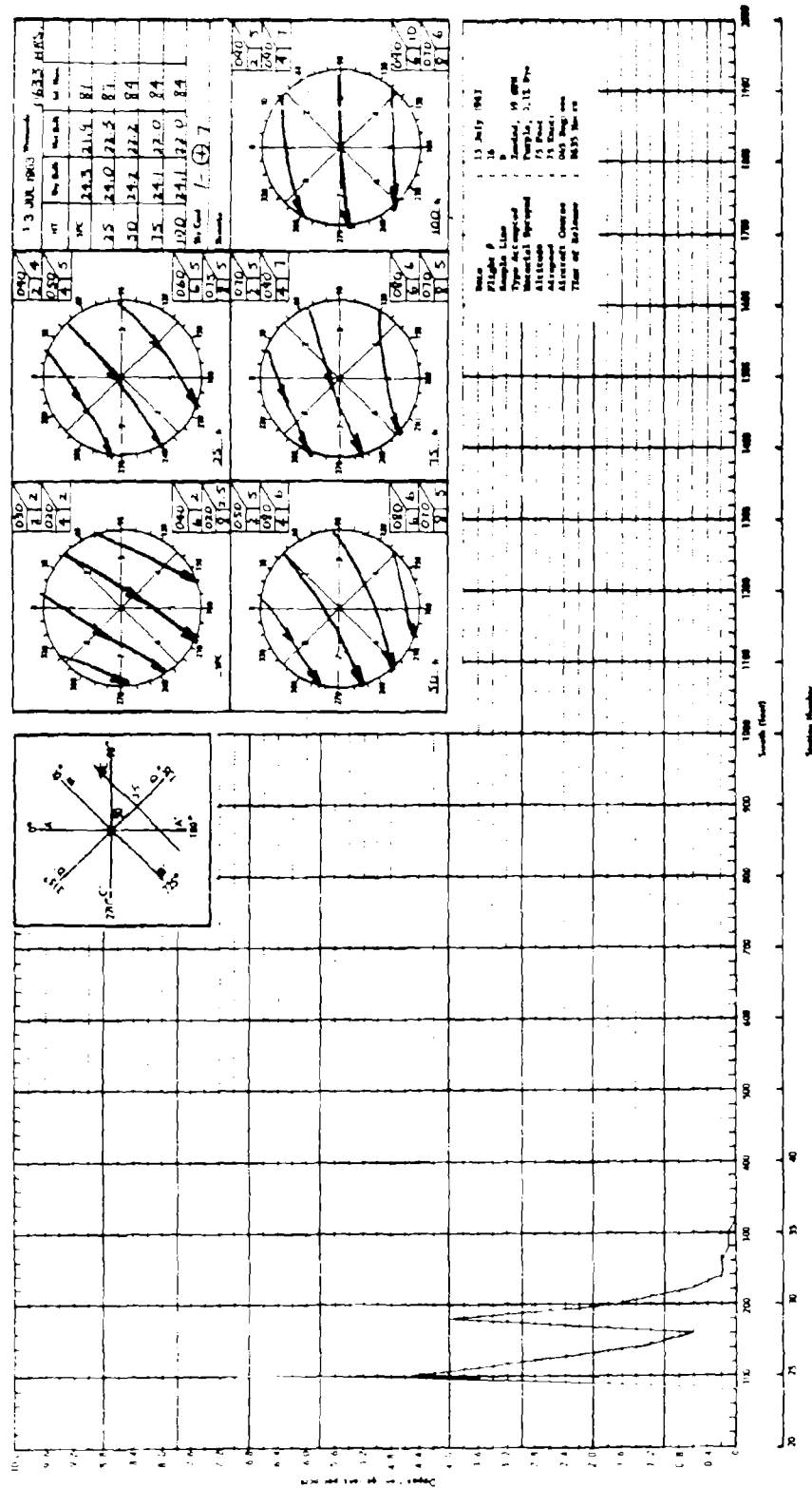


MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 16 AIRSPEED: 75 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0635 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 17 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------|--------|---------|--------|---------|--------|
| Stations 1 - 23 | Blank | 24 | 0.0 | | | | |
| | | 25 | 4.5 | | | | |
| | | 26 | 2.7 | | | | |
| | | 27 | 1.3 | | | | |
| | | 28 | 0.6 | | | | |
| | | 29 | 4.0 | | | | |
| | | 30 | 1.5 | | | | |
| | | 31 | 0.6 | | | | |
| | | 32 | 0.2 | | | | |
| | | 33 | 0.2 | | | | |
| | | 34 | 0.1 | | | | |
| | | 35 | 0.1 | | | | |
| | | Stations 36 - 100 | | Blank | | | |

Total 15.8



MASS MEDIAN DIAMETER

DATE: 13 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 17 PAPER: Kromekote, white
 SAMPLE LINE: A MATERIAL: Purple
 FLOW RATE: 69 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|----------------|
| 28 | 1 | 7500 | | | |
| 25 | 4 | 6700* | | | |
| 25 | 3 | 6600 | | | |
| 25 | 5 | 6500 | | | |
| 25 | 2 | 6400 | 45 | 1A | 100 (smallest) |
| 25 | 6 | 6300 | | | |
| 25 | 8 | 6200 | | | |
| 25 | 7 | 6100 | | | |
| 25 | 9 | 6000 | | | |
| 27 | 11 | 5900 | | | |
| 28 | 10 | 5800 | | | |

$$MMD = \frac{70.44 + 0.1431(\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(6700)}{2.2} = 467.8 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(7500) = 1143.7 \text{ Microns}$$

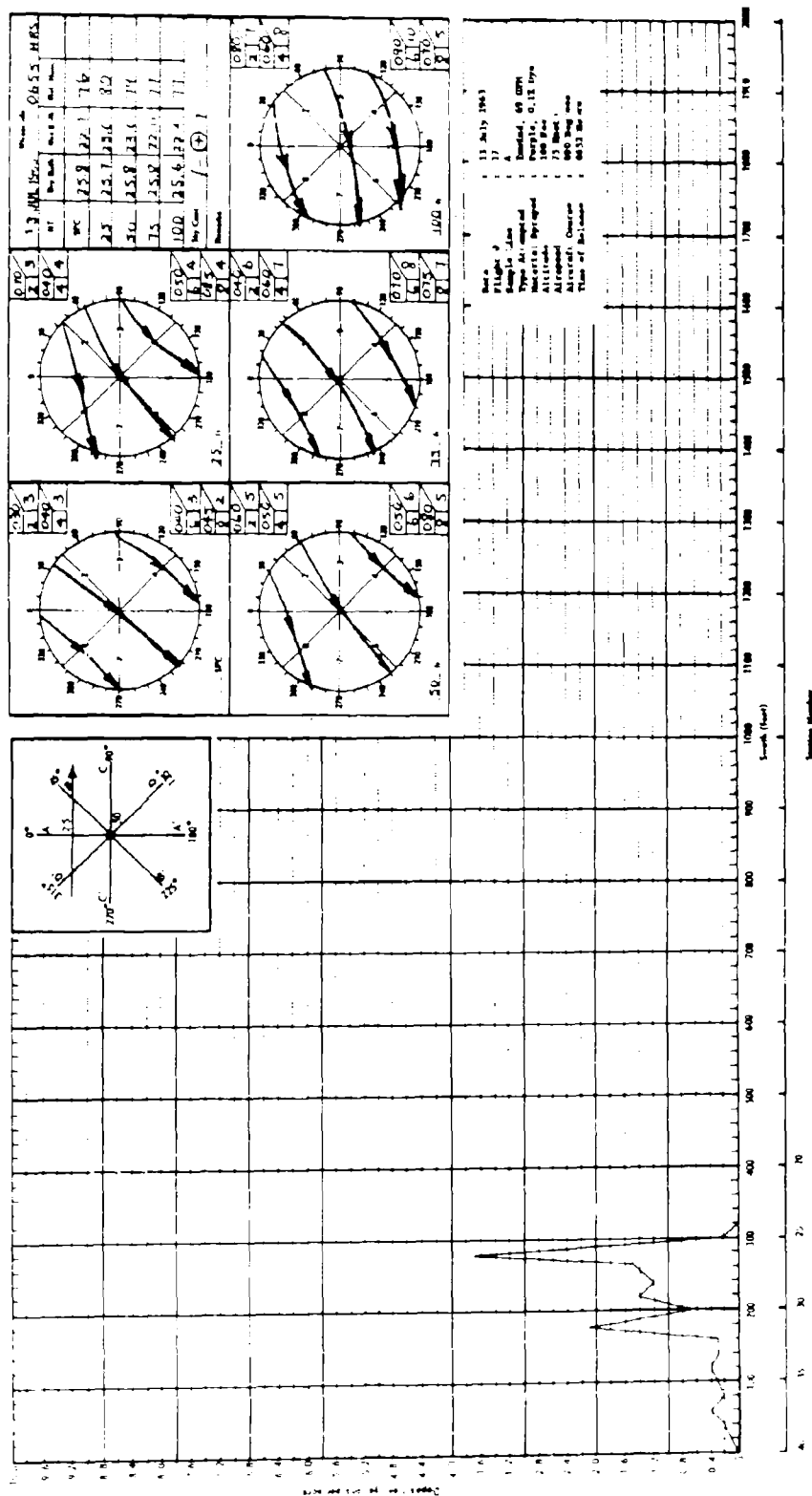
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 17 AIRSPEED: 75 Knots
 SAMPLE LINE: A ALTITUDE: 100 Feet
 TIME OF RELEASE: 0652 Hours AIRCRAFT COURSE: 090 Degrees
 DURATION: 14 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------|--------|---------|--------|---------|--------|
| Stations 1 - 23 | Blank | 24 | 0.0 | | | | |
| | | 25 | 0.2 | | | | |
| | | 26 | 3.7 | | | | |
| | | 27 | 1.5 | | | | |
| | | 28 | 1.2 | | | | |
| | | 29 | 1.4 | | | | |
| | | 30 | 0.7 | | | | |
| | | 31 | 2.1 | | | | |
| | | 32 | 0.3 | | | | |
| | | 33 | 0.3 | | | | |
| | | 34 | 0.4 | | | | |
| | | 35 | 0.3 | | | | |
| | | 36 | 0.2 | | | | |
| | | 37 | 0.4 | | | | |
| | | 38 | 0.2 | | | | |
| | | 39 | 0.1 | | | | |
| | | 40 | 0.0 | | | | |
| | | Stations 41 - 100 | Blank | | | | |

Total 13.7



MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 18 AIRSPEED: 75 Knots
 SAMPLE LINE: A ALTITUDE: 100 Feet
 TIME OF RELEASE: 0654 Hour AIRCRAFT COURSE: 090 Degrees
 DURATION: 18 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|---------|--------|---------|--------|------------------|--------|
| Stations 1 - 71 | Blank | | | | | 72 | 0.0 |
| | | | | | | 73 | 0.1 |
| | | | | | | 74 | 1.5 |
| | | | | | | 75 | 5.3 |
| | | | | | | 76 | 0.2 |
| | | | | | | 77 | 0.4 |
| | | | | | | 78 | 1.3 |
| | | | | | | 79 | 1.5 |
| | | | | | | 80 | 1.0 |
| | | | | | | 81 | 1.9 |
| | | | | | | 82 | 0.2 |
| | | | | | | 83 | 0.2 |
| | | | | | | 84 | 0.1 |
| | | | | | | 85 | 0.1 |
| | | | | | | 86 | 0.1 |
| | | | | | | Station 87 - 100 | |
| | | | | | | Blank | |

Total 13.9

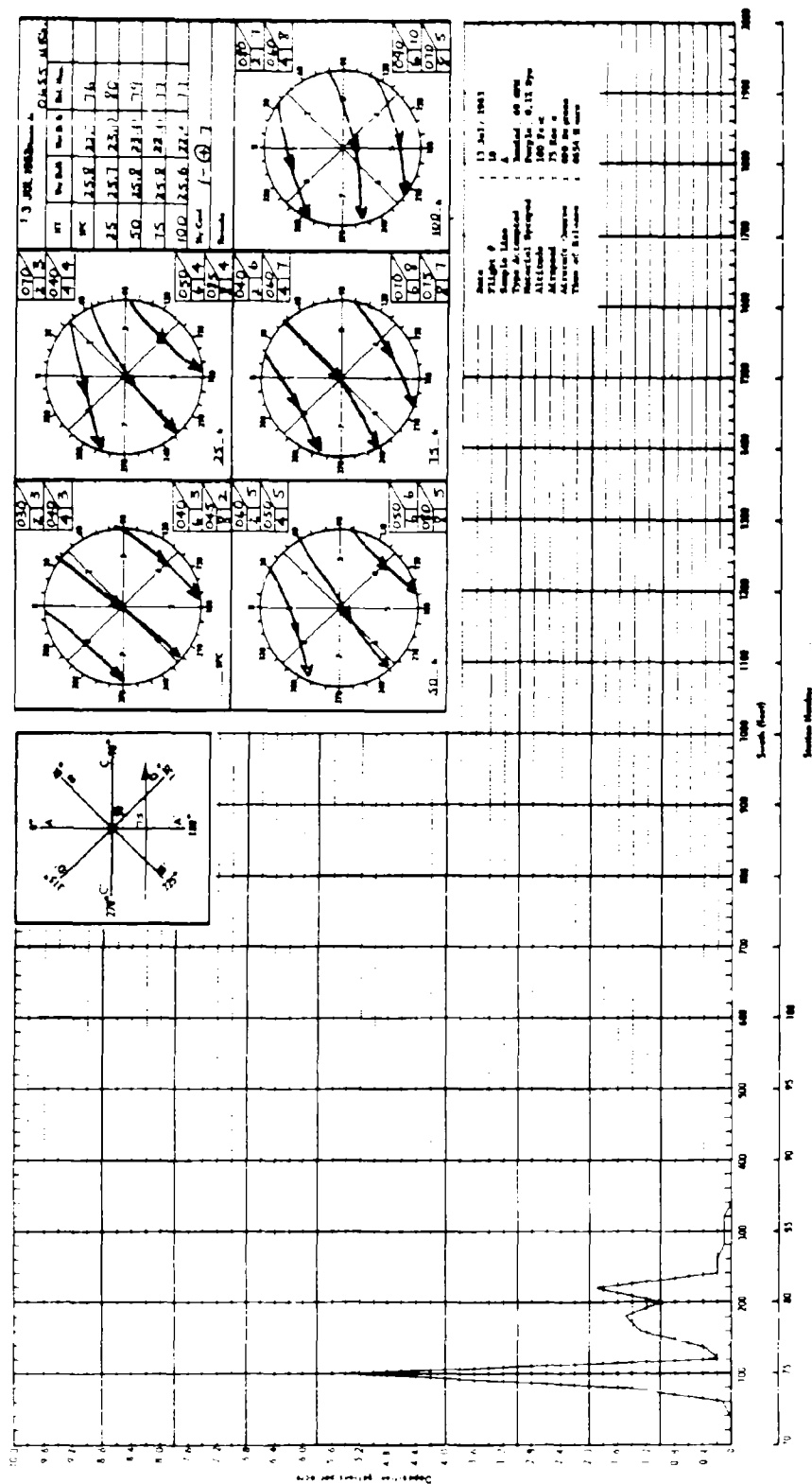


TABLE 24/HYDRA GROUND FLOW & FLIGHT DATA

| | |
|--------------------------------------|--------------------------------------|
| DATE CALIBRATED: <u>16 July 1963</u> | DATE TEST FLOWN: <u>16 July 1963</u> |
| LIQUID SPRAYED: <u>Purple</u> | TOTAL NOZZLES OPEN: <u>60</u> |
| NOZZLE TYPE: <u>8015</u> | LIQUID TEMP: <u>37° C</u> |
| DURATION OF SPRAY: <u>30</u> Sec. | PUMP PRESSURE: <u>32</u> PSI |
| TOTAL AMOUNT SPRAYED: <u>28</u> Gal. | FLOW RATE CALIBRATED: <u>56</u> GPM |

OPERATIONAL DATA DURING FLIGHT

Above information is for Runs 1 - 16.

REMARKS: The pressure readings are from the pressure gauge mounted on the pump which was subsequently proven to be inaccurate.

MASS MEDIAN DIAMETER

DATE: 16 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 1PAPER: Kromekote, whiteSAMPLE LINE: BMATERIAL: PurpleFLOW RATE: 56 GPMSYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 76 | 1 | 6400* | | | |
| 76 | 2 | 6200 | | | |
| 76 | 3 | 6100 | | | |
| 73 | 4 | 6000 | | | |
| 77 | 8 | 5900 | 100 | 1A | 100(smallest) |
| 77 | 7 | 5800 | | | |
| 73 | 5 | 5600 | | | |
| 73 | 6 | 5500 | | | |
| 77 | 9 | 5400 | | | |
| 76 | 10 | 5300 | | | |

$$\text{MMD} = \frac{70.44 + 0.1431(\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(6400)}{2.2} = 448.3 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(6400) = 986.3 \text{ Microns}$$

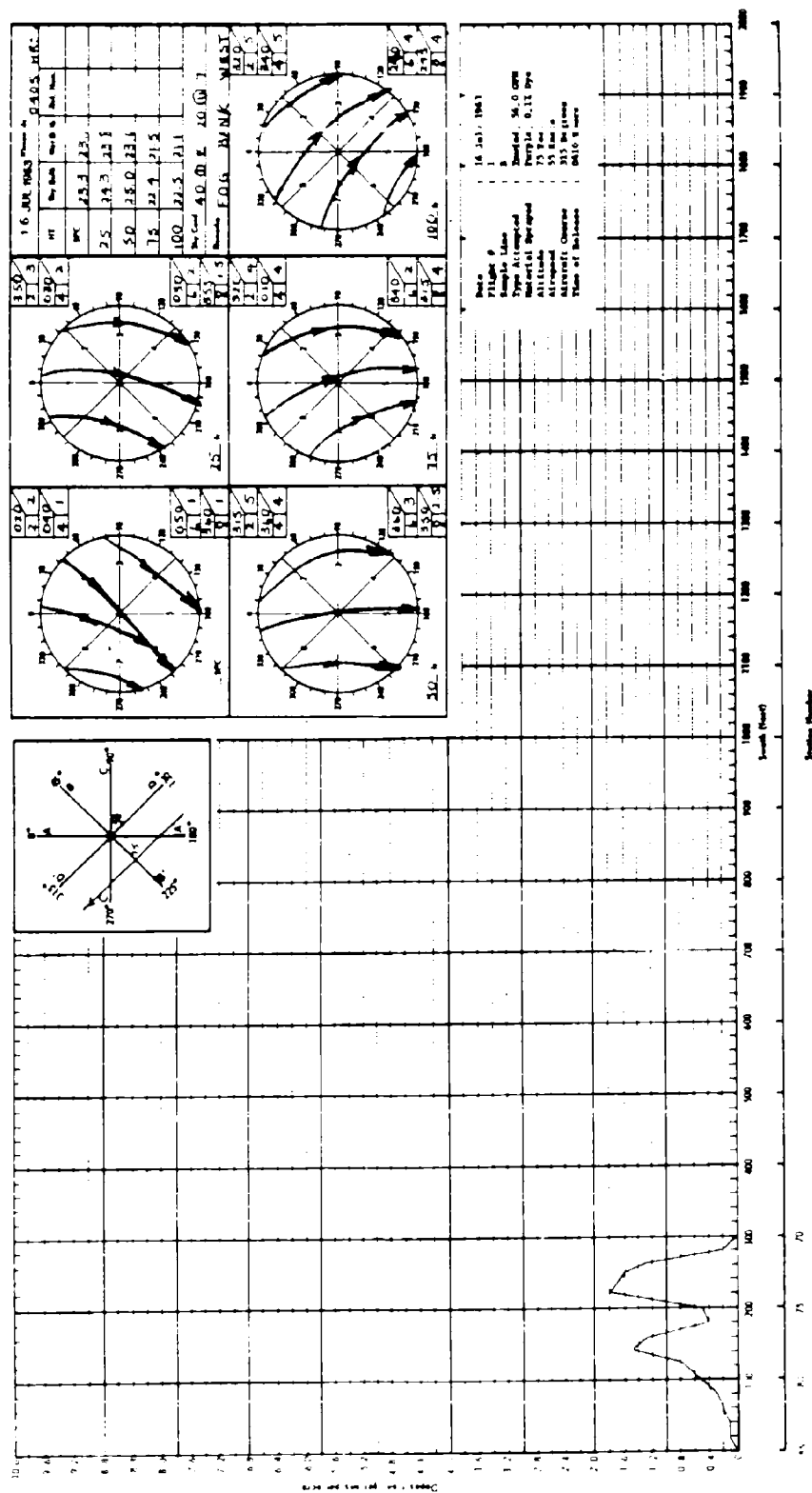
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 1 AIRSPEED: 55 Knot
 SAMPLE LINE: B ALTITUDE: 75 Feet
 TIME OF RELEASE: 0410 Hours AIRCRAFT COURSE: 315 Degrees
 DURATION: ---

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|---------|--------|---------|--------|-------------------|--------|
| Stations 1 - 69 | Blank | | | | | 70 | 0.0 |
| | | | | | | 71 | 0.2 |
| | | | | | | 72 | 1.3 |
| | | | | | | 73 | 1.6 |
| | | | | | | 74 | 1.8 |
| | | | | | | 75 | 0.5 |
| | | | | | | 76 | 0.4 |
| | | | | | | 77 | 1.3 |
| | | | | | | 78 | 1.5 |
| | | | | | | 79 | 0.8 |
| | | | | | | 80 | 0.5 |
| | | | | | | 81 | 0.3 |
| | | | | | | 82 | 0.2 |
| | | | | | | 83 | 0.1 |
| | | | | | | 84 | 0.1 |
| | | | | | | 85 | 0.0 |
| | | | | | | Stations 86 - 100 | |
| | | | | | | Blank | |

Total 10.6



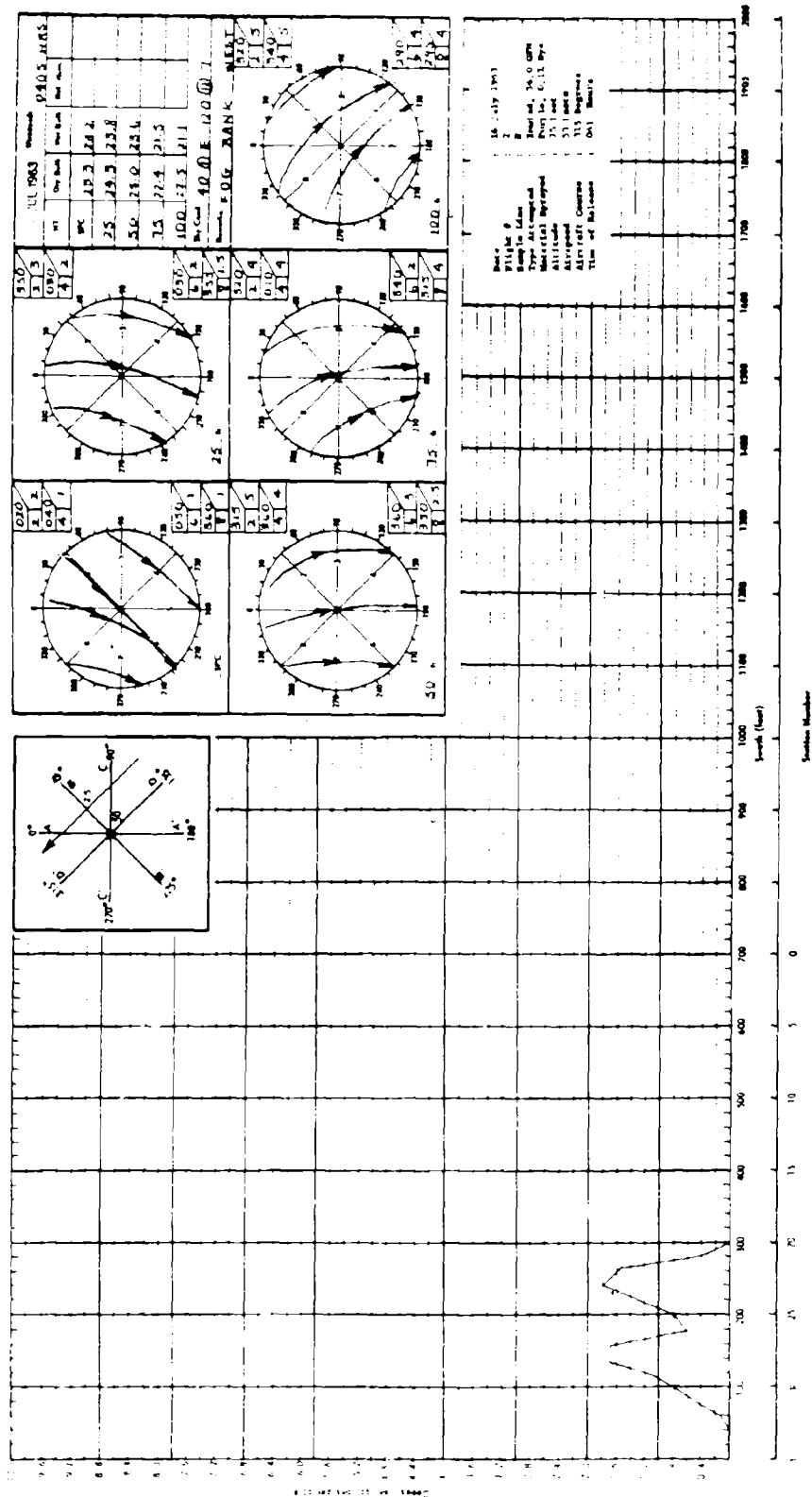
MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 2 AIRSPEED: 55 Knots
 SAMPLE LINE: B ALTITUDE: 75 Feet
 TIME OF RELEASE: 0412 Hours AIRCRAFT COURSE: 315 Degrees
 DURATION: ---

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------|--------|---------|--------|---------|--------|
| Stations 1 - 20 | Blank | 21 | 0.4 | | | | |
| | | 22 | 1.5 | | | | |
| | | 23 | 1.8 | | | | |
| | | 24 | 1.4 | | | | |
| | | 25 | 0.8 | | | | |
| | | 26 | 0.6 | | | | |
| | | 27 | 1.7 | | | | |
| | | 28 | 1.7 | | | | |
| | | 29 | 1.1 | | | | |
| | | 30 | 0.8 | | | | |
| | | 31 | 0.5 | | | | |
| | | 32 | 0.1 | | | | |
| | | Stations 33 - 100 | | Blank | | | |

% Recovery - 56.4

Total 12.4

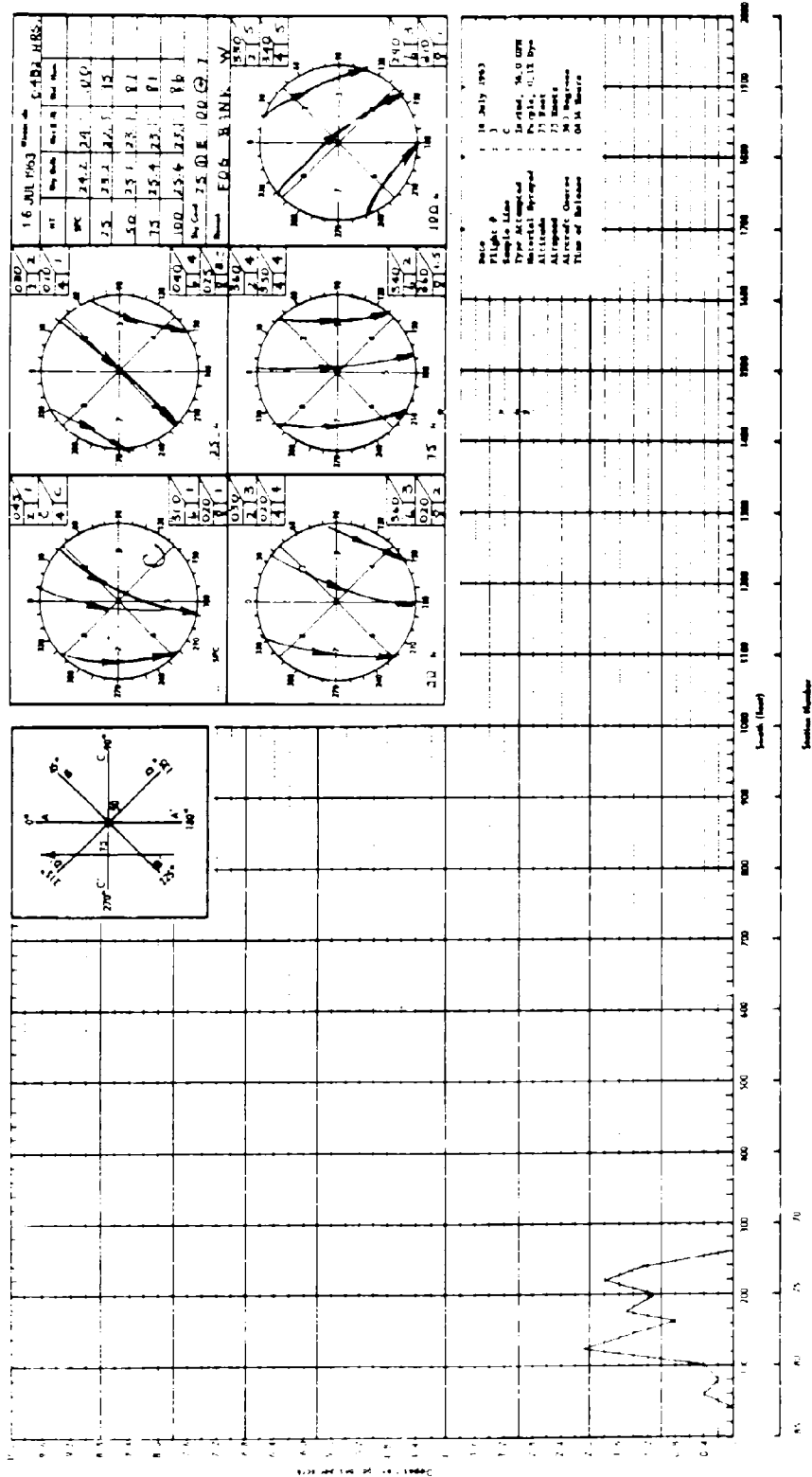


MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 3 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0434 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 11 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|---------|--------|-------------------|--------|---------|--------|
| Stations 1 - 72 | Blank | | | 73 | 1.2 | | |
| | | | | 74 | 1.8 | | |
| | | | | 75 | 1.1 | | |
| | | | | 76 | 1.5 | | |
| | | | | 77 | 0.8 | | |
| | | | | 78 | 1.4 | | |
| | | | | 79 | 2.1 | | |
| | | | | 80 | 0.4 | | |
| | | | | 81 | 0.2 | | |
| | | | | 82 | 0.4 | | |
| | | | | Stations 83 - 100 | | | |
| | | | | | Blank | | |

Total 10.9



MASS MEDIAN DIAMETER

DATE: 16 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 4 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: Purple
 FLOW RATE: 56 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 24 | 1 | 4300* | | | |
| 24 | 4 | 4200 | | | |
| 24 | 2 | 4100 | | | |
| 24 | 3 | 4000 | | | |
| 27 | 6 | 3900 | 50 | 1A | 100(smallest) |
| 24 | 5 | 3800 | | | |
| 27 | 7 | 3700 | | | |
| 27 | 8 | 3600 | | | |
| 23 | 10 | 3500 | | | |
| 24 | 9 | 3400 | | | |

$$\text{MMD} = \frac{70.44 + 0.1431(\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(4300)}{2.2} = 311.7 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(4300) = 665.8 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 4 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0436 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 9 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------------|--------|-------------------------|--------|---------|--------|---------|--------|
| Stations 1 - 21 Blank | | 22 | 0.2 | | | | |
| | | 23 | 1.8 | | | | |
| | | 24 | 1.4 | | | | |
| | | 25 | 1.5 | | | | |
| | | 26 | 0.8 | | | | |
| | | 27 | 0.9 | | | | |
| | | 28 | 2.0 | | | | |
| | | 29 | 1.9 | | | | |
| | | 30 | 1.4 | | | | |
| | | 31 | 0.7 | | | | |
| | | 32 | 0.6 | | | | |
| | | 33 | 0.2 | | | | |
| | | 34 | 0.5 | | | | |
| | | 35 | 0.4 | | | | |
| | | 36 | 0.8 | | | | |
| | | 37 | 0.4 | | | | |
| | | 38 | 0.8 | | | | |
| | | 39 | 0.7 | | | | |
| | | 40 | 0.6 | | | | |
| | | 41 | 0.2 | | | | |
| | | Stations 42 - 100 Blank | | | | | |

Total 17.8

MASS MEDIAN DIAMETER

DATE: 16 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 5PAPER: Kromekote, whiteSAMPLE LINE: CMATERIAL: PurpleFLOW RATE: 56 GPMSYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|----------------|
| 73 | 1 | 7000 | | | |
| 73 | 2 | 5900 | | | |
| 72 | 7 | 5600 | | | |
| 77 | 3 | 5100* | | | |
| 73 | 4 | 5000 | | | |
| 73 | 12 | 4900 | 100 | 1A | 100 (smallest) |
| 72 | 6 | 4700 | | | |
| 72 | 8 | 4600 | | | |
| 72 | 5 | 4500 | | | |
| 72 | 9 | 4400 | | | |
| 72 | 11 | 4300 | | | |
| 72 | 10 | 4200 | | | |

$$MMD = \frac{70.44 + 0.1431(\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(5100)}{2.2} = 363.7 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(7000) = 1072.1 \text{ Microns}$$

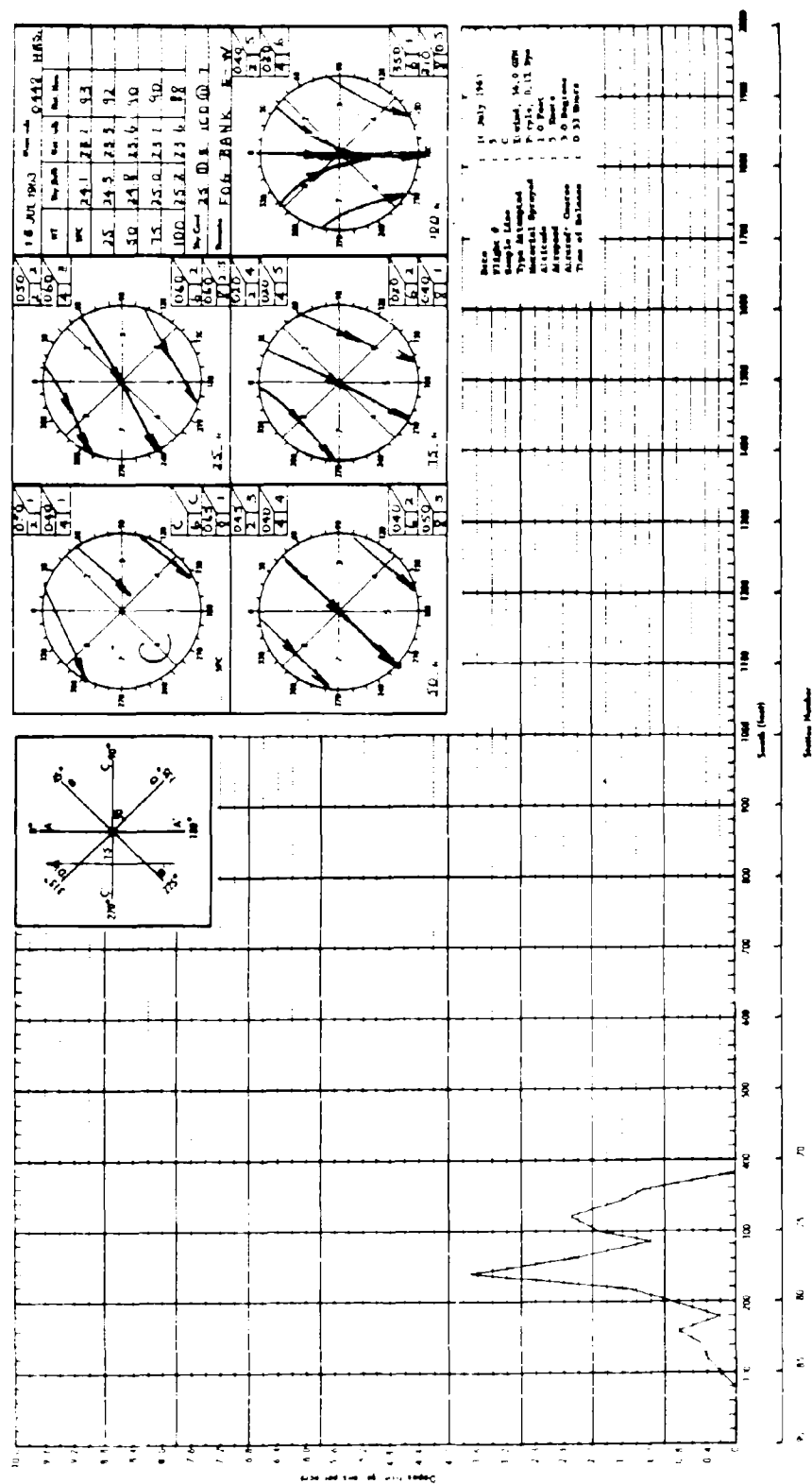
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 5 AIRSPEED: 55 Knots
 SAMPLE LINE: C ALTITUDE: 100 Feet
 TIME OF RELEASE: 0455 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 12 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|---------|--------|-------------------|--------|---------|--------|
| Stations 1 - 71 | Blank | | | 72 | 1.3 | | |
| | | | | 73 | 1.6 | | |
| | | | | 74 | 2.3 | | |
| | | | | 75 | 1.9 | | |
| | | | | 76 | 1.2 | | |
| | | | | 77 | 2.3 | | |
| | | | | 78 | 3.7 | | |
| | | | | 79 | 1.5 | | |
| | | | | 80 | 0.9 | | |
| | | | | 81 | 0.2 | | |
| | | | | 82 | 0.8 | | |
| | | | | 83 | 0.5 | | |
| | | | | 84 | 0.4 | | |
| | | | | 85 | 0.2 | | |
| | | | | Stations 86 - 100 | | | |
| | | | | Blank | | | |

Total 18.8

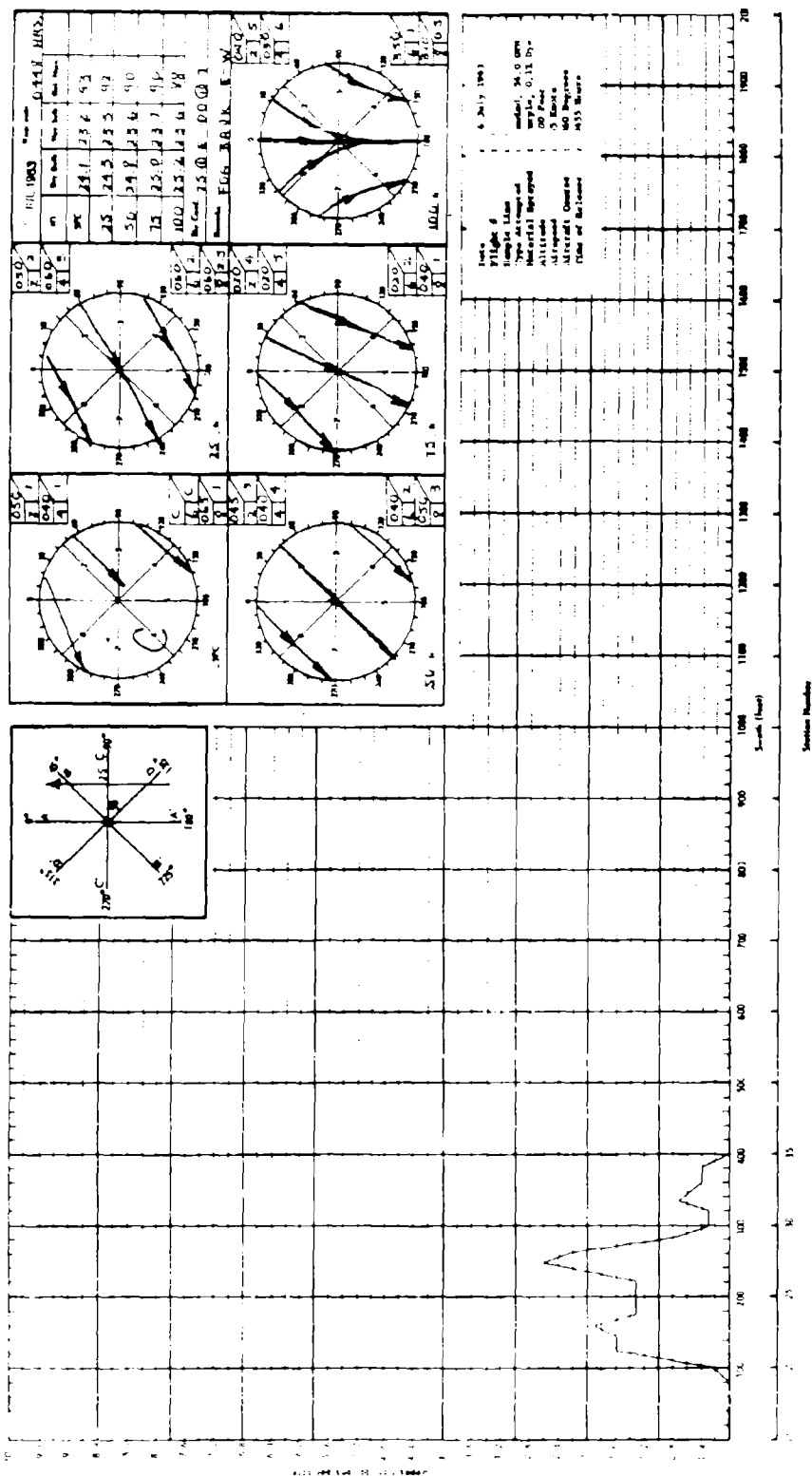


MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 6 AIRSPEED: 55 Knots
 SAMPLE LINE: C ALTITUDE: 100 Feet
 TIME OF RELEASE: 0455 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 13 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------|--------|---------|--------|---------|--------|
| Stations 1 - 19 | Blank | 20 | 0.2 | | | | |
| | | 21 | 1.6 | | | | |
| | | 22 | 1.6 | | | | |
| | | 23 | 1.9 | | | | |
| | | 24 | 1.3 | | | | |
| | | 25 | 1.3 | | | | |
| | | 26 | 1.3 | | | | |
| | | 27 | 2.6 | | | | |
| | | 28 | 2.2 | | | | |
| | | 29 | 0.8 | | | | |
| | | 30 | 0.3 | | | | |
| | | 31 | 0.3 | | | | |
| | | 32 | 0.7 | | | | |
| | | 33 | 0.4 | | | | |
| | | 34 | 0.4 | | | | |
| | | Stations 35 - 100 | Blank | | | | |

Total 16.9



MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 7 AIRSPEED: 55 Knots
 SAMPLE LINE: D AIRCRAFT COURSE: 045 Degrees
 TIME OF RELEASE: 0513 Hours ALTITUDE: 50 Feet
 DURATION: 16 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|---------|--------|---------|--------|-------------------|--------|
| Stations 1 - 73 | Blank | | | | | 74 | 2.8 |
| | | | | | | 75 | 1.7 |
| | | | | | | 76 | 0.7 |
| | | | | | | 77 | 0.4 |
| | | | | | | 78 | 0.5 |
| | | | | | | 79 | 1.7 |
| | | | | | | 80 | 1.4 |
| | | | | | | 81 | 0.6 |
| | | | | | | 82 | 0.6 |
| | | | | | | 83 | 0.9 |
| | | | | | | 84 | 0.2 |
| | | | | | | 85 | 0.1 |
| | | | | | | 86 | 0.2 |
| | | | | | | Stations 87 - 100 | |
| | | | | | | Blank | |

Total 11.8

MASS MEDIAN DIAMETER

DATE: 16 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 8 PAPER: Kromekote, white
 SAMPLE LINE: D MATERIAL: Purple
 FLOW RATE: 56 GPM SYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 27 | 2 | 6100 | | | |
| 26 | 1 | 6000 | | | |
| 27 | 3 | 5900 | | | |
| 23 | 5 | 5100* | | | |
| 27 | 4 | 5000 | 50 | 1A | 100(smallest) |
| 27 | 7 | 4900 | | | |
| 27 | 8 | 4800 | | | |
| 25 | 6 | 4700 | | | |
| 27 | 9 | 4600 | | | |
| 28 | 11 | 4400 | | | |
| 23 | 10 | 4300 | | | |

$$\text{MMD} = \frac{70.44 + 0.1431(\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(5100)}{2.2} = 363.7 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(6100) = 943.4 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 8 AIRSPEED: 55 Knots
 SAMPLE LINE: D ALTITUDE: 50 Feet
 TIME OF RELEASE: 0513 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 12 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------|--------|---------|--------|---------|--------|
| Stations 1 - 21 | Blank | 22 | 2.1 | | | | |
| | | 23 | 2.1 | | | | |
| | | 24 | 1.6 | | | | |
| | | 25 | 0.9 | | | | |
| | | 26 | 0.4 | | | | |
| | | 27 | 0.8 | | | | |
| | | 28 | 0.9 | | | | |
| | | 29 | 2.3 | | | | |
| | | 30 | 2.0 | | | | |
| | | 31 | 0.8 | | | | |
| | | 32 | 0.2 | | | | |
| | | 33 | 0.2 | | | | |
| | | 34 | 0.1 | | | | |
| | | Stations 35 - 100 | Blank | | | | |

% Recovery - 65.7

Total 14.4

MASS MEDIAN DIAMETER

DATE: 16 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 9PAPER: Kromekote, whiteSAMPLE LINE: AMATERIAL: PurpleFLOW RATE: 56 GPMSYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 78 | 1 | 5200 | | | |
| 77 | 2 | 5000 | | | |
| 78 | 3 | 4400* | | | |
| 78 | 9 | 4300 | | | |
| 79 | 5 | 4200 | 99 | 1A | 100(smallest) |
| 79 | 4 | 4100 | | | |
| 77 | 6 | 4000 | | | |
| 78 | 10 | 3900 | | | |
| 77 | 7 | 3700 | | | |
| 77 | 8 | 3600 | | | |

$$MMD = \frac{70.44 + 0.1431(\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(4400)}{2.2} = 318.2 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(5200) = 814.6 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 9 AIRSPEED: 75 Knots
 SAMPLE LINE: A ALTITUDE: 50 Feet
 TIME OF RELEASE: 0534 Hours AIRCRAFT COURSE: 090 Degrees
 DURATION: 09 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|---------|--------|---------|--------|-------------------|--------|
| Stations 1 - 74 | Blank | | | | | 75 | 3.7 |
| | | | | | | 76 | 0.3 |
| | | | | | | 77 | 0.9 |
| | | | | | | 78 | 1.1 |
| | | | | | | 79 | 1.3 |
| | | | | | | 80 | 0.9 |
| | | | | | | 81 | 1.3 |
| | | | | | | 82 | 1.0 |
| | | | | | | 83 | 0.9 |
| | | | | | | 84 | 0.5 |
| | | | | | | 85 | 0.4 |
| | | | | | | 86 | 0.7 |
| | | | | | | 87 | 0.7 |
| | | | | | | 88 | 0.4 |
| | | | | | | 89 | 0.3 |
| | | | | | | 90 | 0.3 |
| | | | | | | Stations 91 - 100 | |
| | | | | | | Blank | |

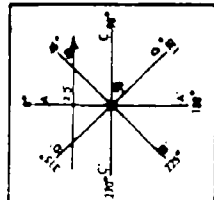
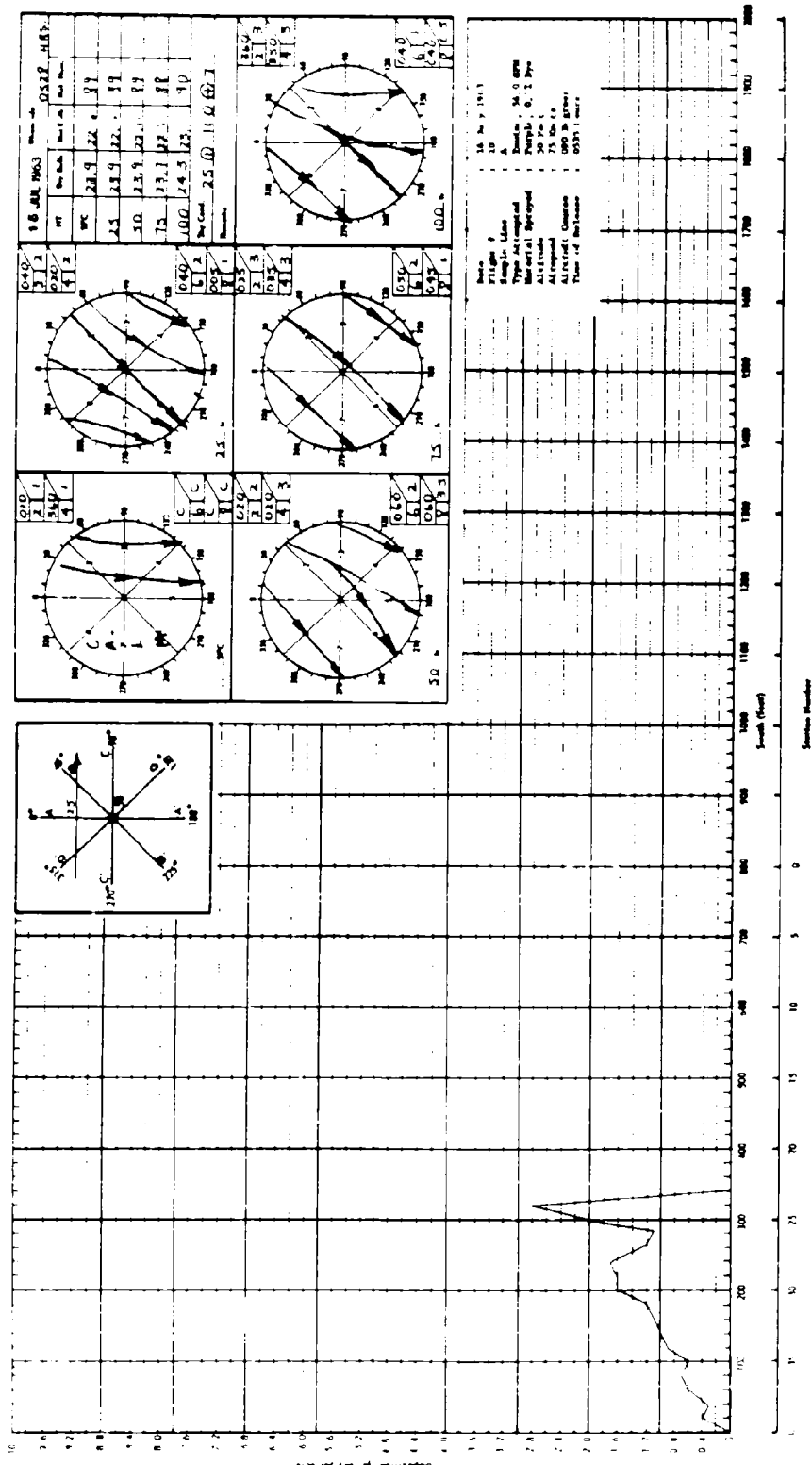
Total 14.7

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 10 AIRSPEED: 75 Knots
 SAMPLE LINE: A ALTITUDE: 50 Feet
 TIME OF RELEASE: 0535 Hours AIRCRAFT COURSE: 090 Degrees
 DURATION: 13 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------|--------|---------|--------|---------|--------|
| Stations 1 - 23 | Blank | 24 | 2.8 | | | | |
| | | 25 | 2.0 | | | | |
| | | 26 | 1.1 | | | | |
| | | 27 | 1.2 | | | | |
| | | 28 | 1.7 | | | | |
| | | 29 | 1.6 | | | | |
| | | 30 | 1.6 | | | | |
| | | 31 | 1.2 | | | | |
| | | 32 | 1.1 | | | | |
| | | 33 | 1.0 | | | | |
| | | 34 | 0.9 | | | | |
| | | 35 | 0.6 | | | | |
| | | 36 | 0.7 | | | | |
| | | 37 | 0.6 | | | | |
| | | 38 | 0.3 | | | | |
| | | 39 | 0.4 | | | | |
| | | Stations 40 - 100 | | Blank | | | |

Total 18.8



MASS MEDIAN DIAMETER

DATE: 16 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 11PAPER: Kromekote, whiteSAMPLE LINE: DMATERIAL: PurpleFLOW RATE: 56 GPMSYSTEM: HIDAL

| STA. | DROP # | SIZE | STA. | DROP # | SIZE |
|------|--------|-------|------|--------|---------------|
| 74 | 1 | 5000 | | | |
| 75 | 2 | 4600* | | | |
| 73 | 8 | 4400 | | | |
| 74 | 4 | 4300 | | | |
| 74 | 3 | 4100 | 89 | 1A | 100(smallest) |
| 74 | 5 | 4000 | | | |
| 74 | 6 | 3900 | | | |
| 75 | 7 | 3800 | | | |
| 75 | 9 | 3700 | | | |
| 75 | 10 | 3500 | | | |

$$MMD = \frac{70.44 + 0.1431(\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(4600)}{2.2} = 331.2 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(5000) = 785.9 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 11 AIRSPEED: 75 Knots
 SAMPLE LINE: D ALTITUDE: 100 Feet
 TIME OF RELEASE: 0555 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 12 Sec.

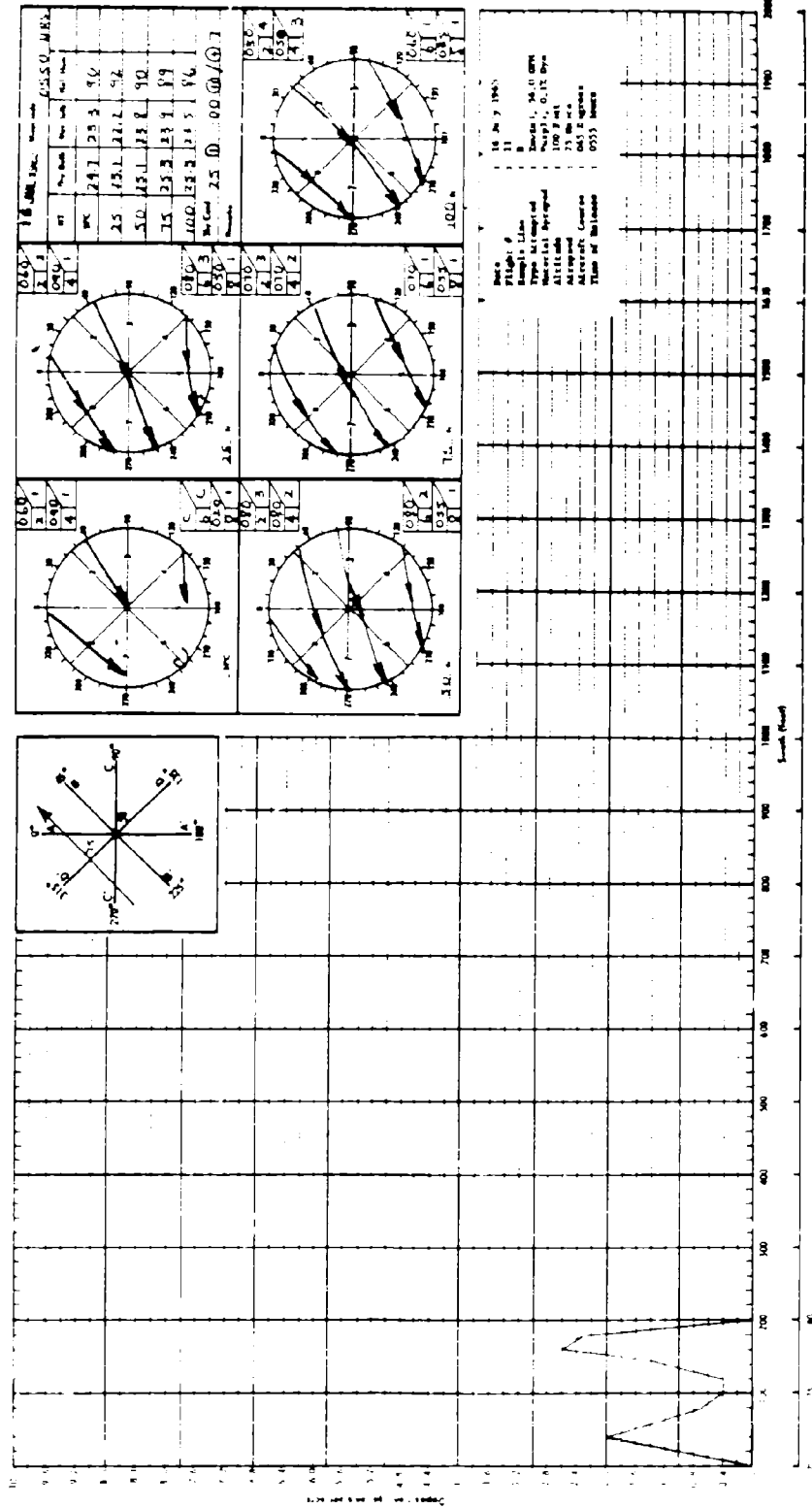
STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 70 Blank

71 1.1
 72 2.0
 73 1.5
 74 0.7
 75 0.4
 76 0.4
 77 1.4
 78 2.6
 79 2.3

Stations 80 - 100 Blank

% Recovery - 72.2

Total 12.4

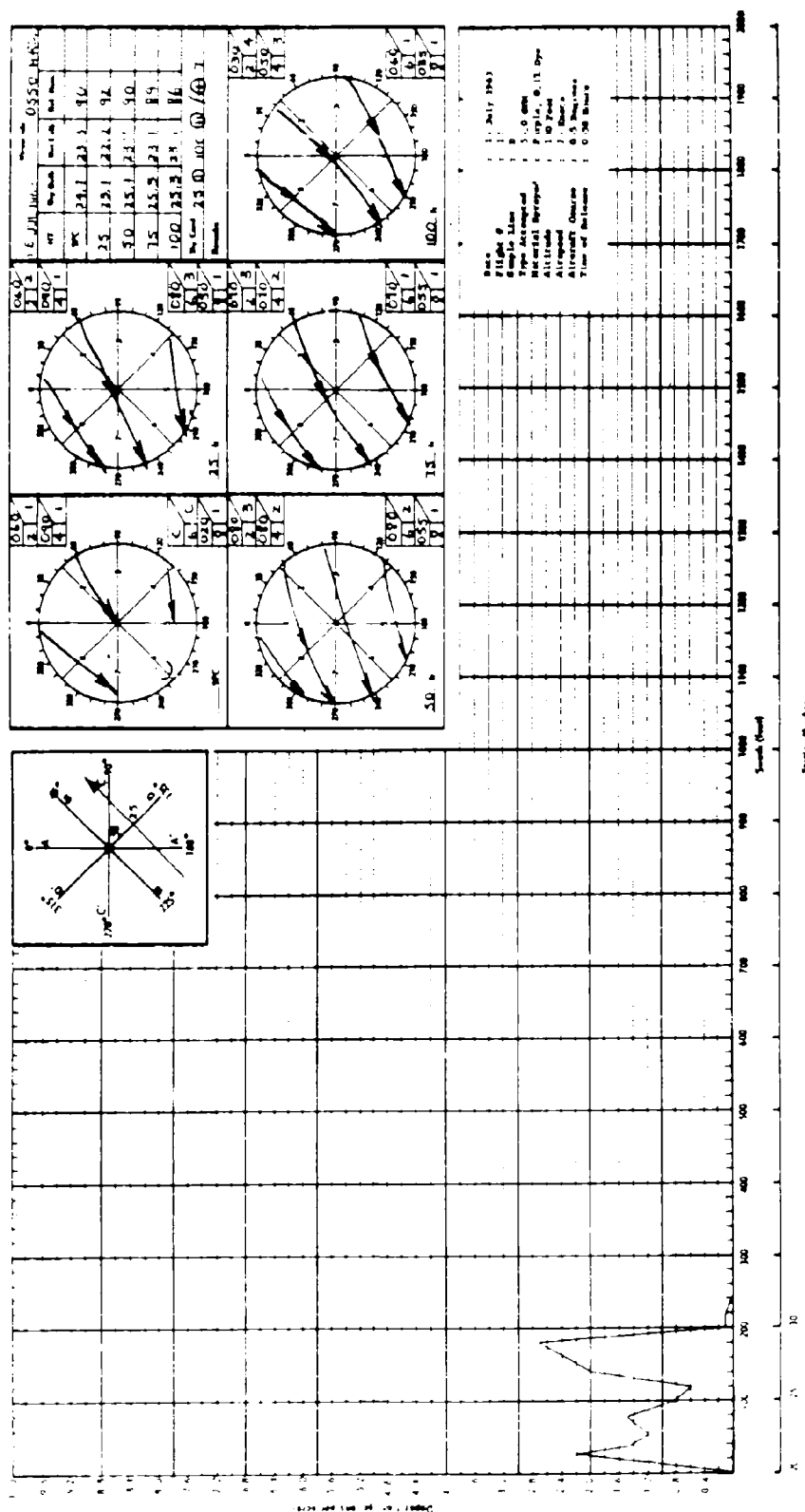


MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 12 AIRSPEED: 75 Knots
 SAMPLE LINE: D ALTITUDE: 100 Feet
 TIME OF RELEASE: 0558 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 12 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|----------------|--------|-------------------|--------|---------|--------|---------|--------|
| Stations 1- 19 | Blank | 20 | 0.0 | | | | |
| | | 21 | 2.2 | | | | |
| | | 22 | 1.5 | | | | |
| | | 23 | 1.2 | | | | |
| | | 24 | 1.5 | | | | |
| | | 25 | 0.8 | | | | |
| | | 26 | 0.6 | | | | |
| | | 27 | 2.0 | | | | |
| | | 28 | 2.4 | | | | |
| | | 29 | 2.7 | | | | |
| | | 30 | 0.1 | | | | |
| | | 31 | 0.1 | | | | |
| | | Stations 32 - 100 | Blank | | | | |

Total 15.1



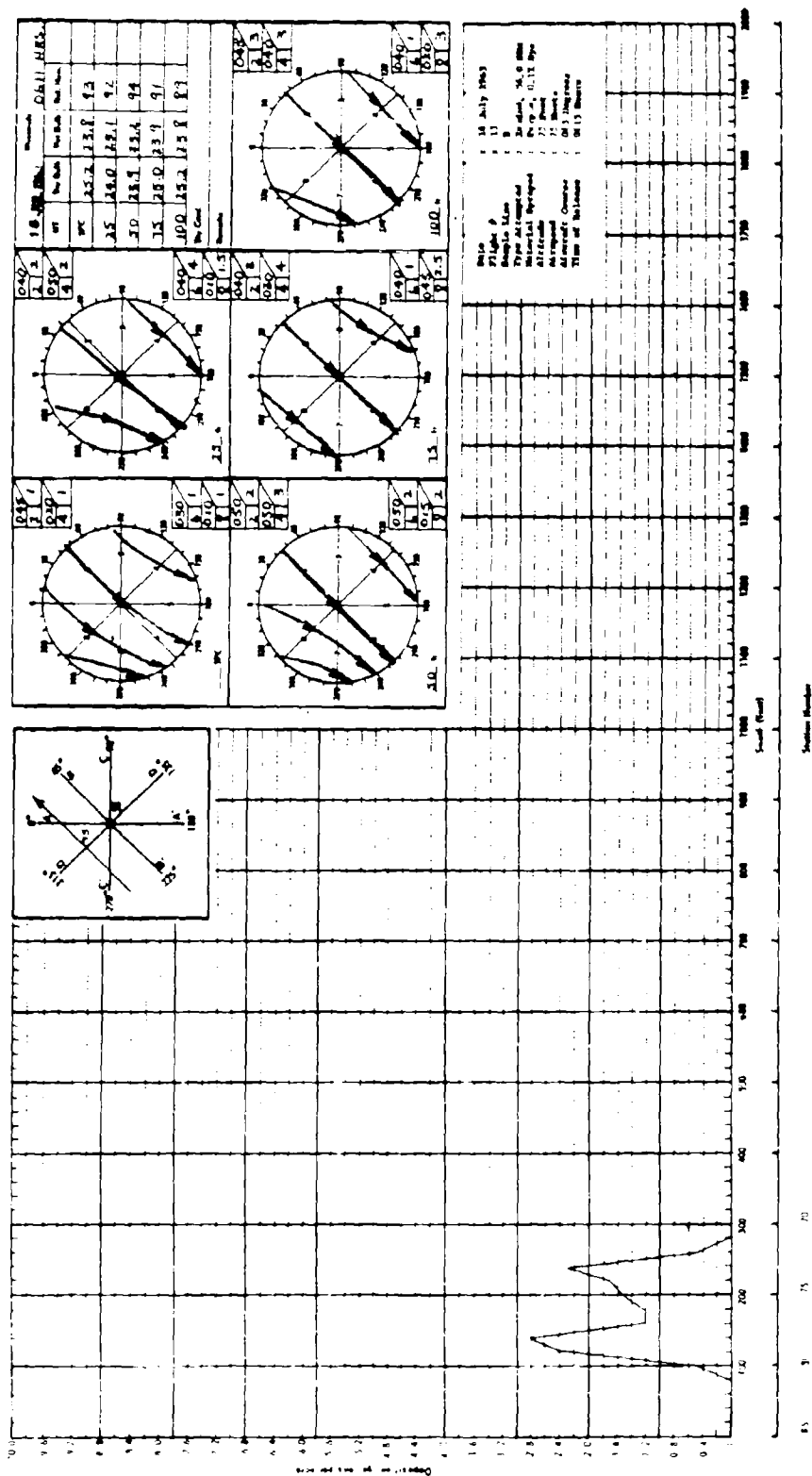
MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 13 AIRSPEED: 75 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0615 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 8 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|---------|--------|---------|--------|-------------------|--------|
| Stations 1 - 71 | Blank | | | | | 72 | 0.5 |
| | | | | | | 73 | 2.3 |
| | | | | | | 74 | 1.7 |
| | | | | | | 75 | 1.5 |
| | | | | | | 76 | 1.2 |
| | | | | | | 77 | 1.2 |
| | | | | | | 78 | 2.8 |
| | | | | | | 79 | 2.4 |
| | | | | | | 80 | 0.5 |
| | | | | | | Stations 81 - 100 | |
| | | | | | | Blank | |

% Recovery - 87.7

Total 14.1



MASS DEPOSIT

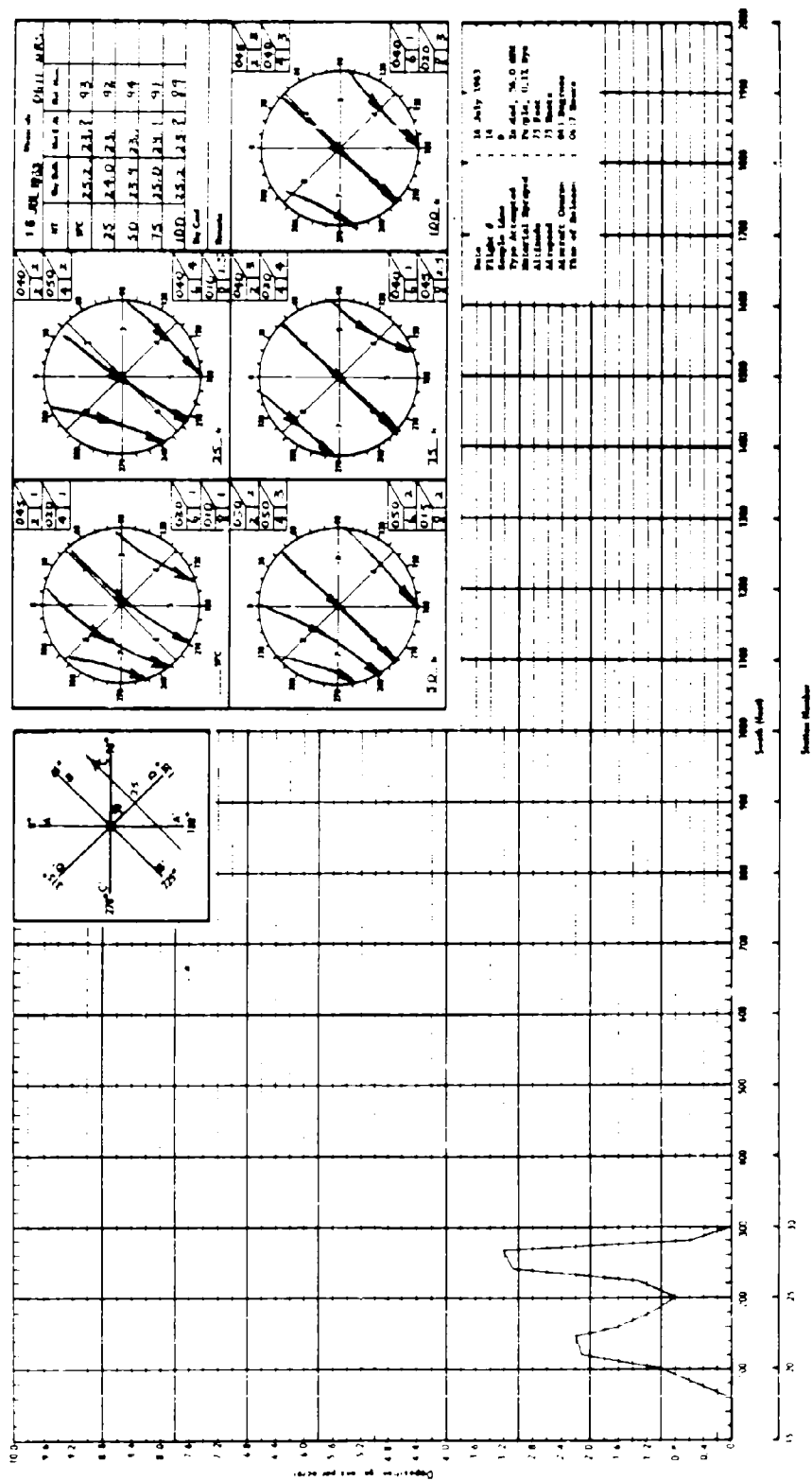
MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 14 AIRSPEED: 75 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0617 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 9 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 18 Blank

19 0.5
 20 1.0
 21 2.1
 22 2.2
 23 1.6
 24 1.1
 25 0.8
 26 1.3
 27 3.1
 28 3.2
 29 0.6
 Stations 30 - 100 Blank

% Recovery - 108.9

Total 17.5



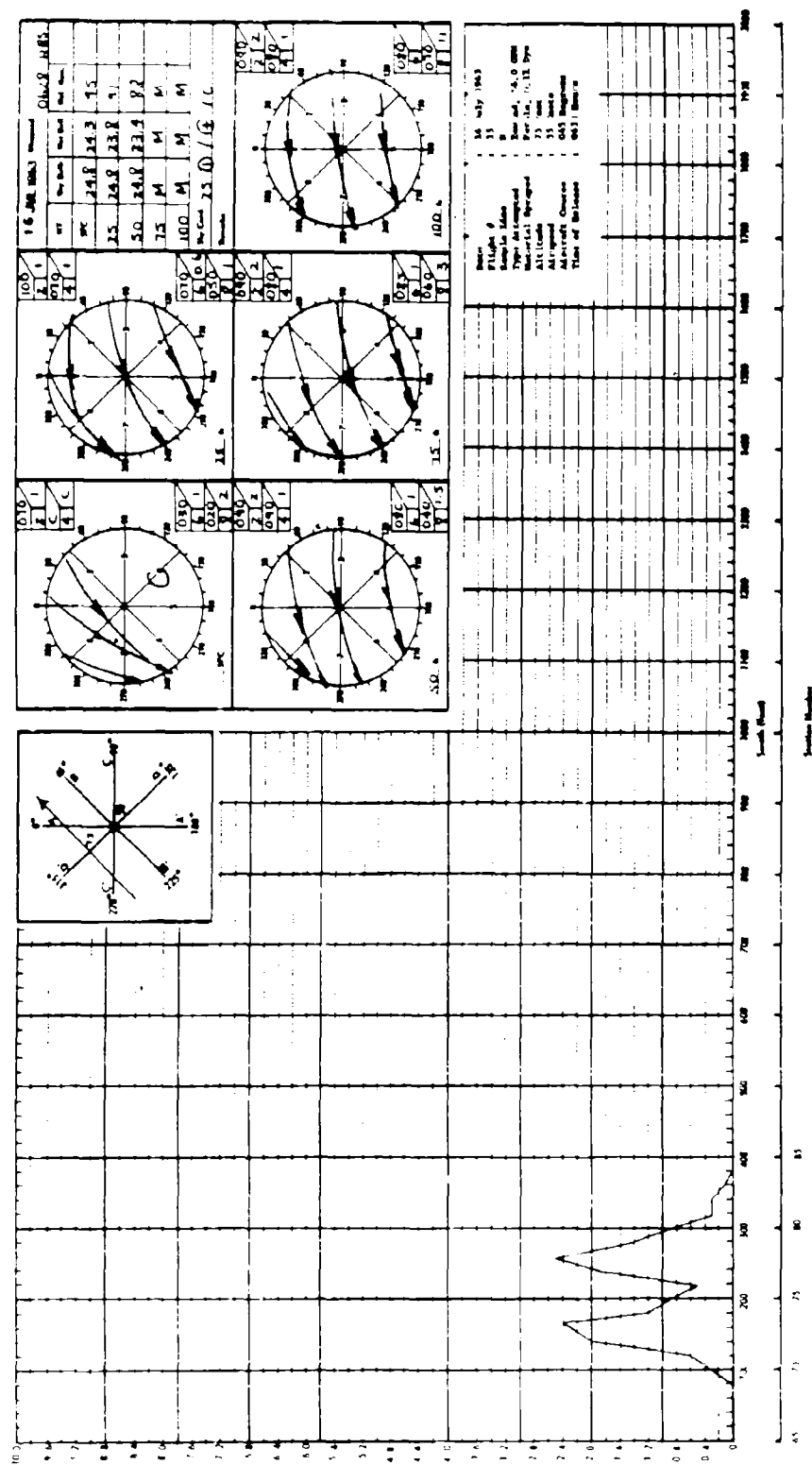
MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 15 AIRSPEED: 55 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0633 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 8 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|---------|--------|-------------------|--------|---------|--------|
| Stations 1 - 69 | Blank | | | 70 | 0.3 | | |
| | | | | 71 | 0.6 | | |
| | | | | 72 | 2.0 | | |
| | | | | 73 | 2.4 | | |
| | | | | 74 | 1.2 | | |
| | | | | 75 | 0.9 | | |
| | | | | 76 | 0.5 | | |
| | | | | 77 | 1.9 | | |
| | | | | 78 | 2.5 | | |
| | | | | 79 | 1.4 | | |
| | | | | 80 | 0.9 | | |
| | | | | 81 | 0.3 | | |
| | | | | 82 | 0.3 | | |
| | | | | 83 | 0.1 | | |
| | | | | Stations 84 - 100 | | | |
| | | | | | Blank | | |

% Recovery - 69.8

Total 15.3



MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 16 AIRSPEED: 55 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0635 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 11 Sec.

| STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. | STATION | G.P.A. |
|-----------------|--------|-------------------|--------|---------|--------|---------|--------|
| Stations 1 - 17 | Blank | 18 | 0.2 | | | | |
| | | 19 | 1.3 | | | | |
| | | 20 | 1.7 | | | | |
| | | 21 | 1.4 | | | | |
| | | 22 | 1.5 | | | | |
| | | 23 | 1.3 | | | | |
| | | 24 | 0.8 | | | | |
| | | 25 | 0.7 | | | | |
| | | 26 | 1.4 | | | | |
| | | 27 | 1.4 | | | | |
| | | 28 | 2.1 | | | | |
| | | 29 | 3.3 | | | | |
| | | 30 | 0.3 | | | | |
| | | 31 | 0.2 | | | | |
| | | 32 | 0.2 | | | | |
| | | 33 | 0.0 | | | | |
| | | Stations 34 - 100 | | Blank | | | |

% Recovery - 81.7

Total 17.8

